

# THE MEDICAL JOURNAL OF AUSTRALIA

VOL. I.—26TH YEAR.

SYDNEY, SATURDAY, JUNE 24, 1939.

No. 25.

## Table of Contents

[The Whole of the Literary Matter in THE MEDICAL JOURNAL OF AUSTRALIA is Copyright.]

| ORIGINAL ARTICLES—                                                                                                          | Page. | BRITISH MEDICAL ASSOCIATION NEWS—                                      | Page. |
|-----------------------------------------------------------------------------------------------------------------------------|-------|------------------------------------------------------------------------|-------|
| Some Observations on the Treatment of Mental Disease, by D. M. McWHAE, M.D., M.R.C.P., F.R.A.C.P. . . . .                   | 919   | Scientific . . . . .                                                   | 937   |
| Recent Work in the Study of Epilepsy, by GILBERT PHILLIPS . . . . .                                                         | 922   | Queensland Branch News . . . . .                                       | 939   |
| The Three-Dye Treatment of Burns, by J. B. DEVINE . . . . .                                                                 | 924   | MEDICAL PRACTICE—                                                      |       |
| The First Australian Health Officer, by W. G. ARMSTRONG, M.B., Ch.M., D.P.H. . . . .                                        | 928   | The Police Offences Amendment (Drugs) Act of New South Wales . . . . . | 940   |
| Congestive Heart Failure in the Later Months of Pregnancy, by STANLEY D. MEARES, M.B., B.S., F.R.C.S.E., M.R.C.O.G. . . . . | 929   | CORRESPONDENCE—                                                        |       |
| Blood Groups in Queensland, by NOEL R. HENRY, B.Sc. . . . .                                                                 | 932   | Tuberculosis following Circumcision . . . . .                          | 942   |
| REVIEWS—                                                                                                                    |       | SPECIAL NOTICE—                                                        |       |
| Short-Wave Therapy . . . . .                                                                                                | 933   | The Wiluna Hospital, Western Australia . . . . .                       | 943   |
| A Text-Book of Medicine . . . . .                                                                                           | 933   | MEDICAL PRIZES—                                                        |       |
| Babies . . . . .                                                                                                            | 933   | The Royal Zoological Society of Victoria . . . . .                     | 943   |
| Clinical Bacteriology . . . . .                                                                                             | 933   | OBITUARY—                                                              |       |
| Uterus Masculinus . . . . .                                                                                                 | 934   | James Hutcheson Pestell . . . . .                                      | 943   |
| Surgical Handicraft . . . . .                                                                                               | 934   | NOMINATIONS AND ELECTIONS . . . . .                                    | 944   |
| The Control of Diabetes . . . . .                                                                                           | 934   | BOOKS RECEIVED . . . . .                                               | 944   |
| LEADING ARTICLES—                                                                                                           |       | DIARY FOR THE MONTH . . . . .                                          | 944   |
| Things Are Not What They Were . . . . .                                                                                     | 935   | MEDICAL APPOINTMENTS . . . . .                                         | 944   |
| CURRENT COMMENT—                                                                                                            |       | MEDICAL APPOINTMENTS VACANT, ETC. . . . .                              | 944   |
| The Sclerosing of Large Varicose Veins at One Sitting . . . . .                                                             | 936   | MEDICAL APPOINTMENTS: IMPORTANT NOTICE . . . . .                       | 944   |
| Transmission of Syphilis by Transfusion . . . . .                                                                           | 936   | EDITORIAL NOTICES . . . . .                                            | 944   |

### SOME OBSERVATIONS ON THE TREATMENT OF MENTAL DISEASE.<sup>1</sup>

By D. M. McWHAE, M.D., M.R.C.P., F.R.A.C.P.,  
Perth.

It has been the custom for many years for one of us to give at this meeting a short paper or clinical demonstration on some subject of psychiatric interest, and I thought that a brief description of some of my observations during a recent visit to England might be appropriate.

#### Calculation of the Basal Metabolic Rate by an Electrical Test.

It does not appear to be widely known here that in 1934, at the Maudsley Hospital,<sup>(1)</sup> a method was worked out of estimating the basal metabolic rate by a short electrical test. This test takes less than

ten minutes to perform and requires no preparation of the patient at all; the apparatus required is easily portable and the readings are direct. The method is based on the impedance which the human body offers to an alternating electric current. The patient immerses the whole of each forearm up to the elbow in arm baths, the electrodes consisting of lead plates in 1% sodium chloride solution, and measurements are made of the impedance vector between the two electrodes, an amplifier keeping the current sufficiently low so as to be imperceptible.

The impedance to the current resides in underlying tissues or body fluids, the epidermis constituting only a negligible factor of the total impedance. The impedance offered by the patient is balanced by the adjustment of a variable condenser and a variable resistance, and from these readings the impedance angle can be calculated.

The impedance angle is constant in the same individual in the starving state; and an investigation of 134 persons, of whom 53 had primary toxic

<sup>1</sup>Read at the annual meeting of the Western Australian Branch of the British Medical Association on March 26, 1939.

goitre, 31 had secondary toxic goitre, 33 had non-toxic goitre and 20 were normal, showed that there was a definite relationship between the basal metabolic rate and the impedance angle, and that the new test was a reliable aid in the diagnosis of thyrotoxicosis.

The normal range of the impedance angle is -10 to +10, corresponding to the normal range of the basal metabolic rate of -20 to +20.

The mean value of the impedance angle in the 134 cases mentioned was as follows: primary thyrotoxicosis, +22.7; secondary thyrotoxicosis, +21.2; non-toxic goitre, -9.8. In 69 out of 84 cases of toxic goitre (82%) the impedance angle was above the normal range, while in 29 of 46 cases (63%) in which the basal metabolic rate was estimated, the basal metabolic rate was above normal range. It was therefore thought that the new test was the more reliable of the two.

It seemed to me to be almost a routine weekly test for patients in the Maudsley Hospital, and it was used as a guide to the administration or otherwise of small doses of thyroid extract. I was informed that there is often a delay of three weeks before changes appear in the impedance angle, so that the test does not satisfactorily meet the clinical requirements of patients with thyrotoxicosis undergoing hospital treatment preparatory to operation, because it does not reveal changes in the metabolic rate quickly enough.

#### Methods of Treatment of General Paralysis of the Insane.

I saw malarial treatment being carried out at Horton Hospital, to which are sent the general paralysis patients from the London County Council hospitals. Mosquitoes are bred in glass enclosures at tropical heat. Twenty mosquitoes are collected in a glass beaker, one end of which is covered with gauze. They are collected by means of a test tube, which is placed over a mosquito, and in which it can walk but not fly. The open end of the test tube is then inserted into the glass beaker through an opening in the gauze. The beaker itself is inverted over the patient, and only mosquitoes which have bitten and which are full of blood are subsequently used. The same vessel is inverted over the patient in order to infect him. A benign tertian strain of malaria obtained from Madagascar has been in use for twelve years and is still giving good results.

After seven days of pyrexia the patient is given 0.3 gramme (five grains) of quinine sulphate. This brings the temperature to normal for some days, when the pyrexia begins again. Ten to twelve periods of pyrexia above 39.5° C. (103° F.) are allowed, and then they are terminated by the administration of 0.3 gramme (five grains) of quinine sulphate once a day for fifteen days. Larger doses of quinine were abandoned because they were unnecessary and often caused some signs of quinine intoxication, such as dizziness and depression.

Each day a blood film is examined and the number of parasites in a constant field is recorded daily on

the chart. The apyrexial period produced in the middle of the treatment gives the patient a good rest and lessens the intensity of the infection. After mosquito infection, in 50% of cases a relapse occurs, in a few as late as nine months afterwards; but the relapse is short and rapidly disappears without treatment. No relapses occur when the method of infection by blood is used.

Sometimes, if it is not possible to infect the patient with the tertian strain a quotidian strain is used. With this latter strain infection by blood is never successful, so the mosquito method must be used. Sometimes patients who have had malaria are very difficult to infect; one such patient was given two blood infections and one mosquito infection, and even then only a slight pyrexia resulted.

Infected defibrinated blood is also sent from Horton Hospital for outside treatment; but it must be injected within twenty-four hours.

The opinion at Horton Hospital, after twelve years of experience of malarial therapy,<sup>(2)</sup> was that malaria proved an effective spirochaeticidal agent in about 85% of cases, whilst the number of genuine clinical cures was probably not much above 20%. The relatively small number of cures was considered to be due to the fact that irreparable damage had been done to the brain before malarial therapy had been given. One result of the treatment has been that the population of mental hospitals has been increased by the formation of a new type of chronic mental disorder—arrested general paralysis.

It was thought at Horton that the way to better clinical results lay in prophylaxis and earlier diagnosis rather than in more intensive treatment or in the substitution of one form of treatment for another. "Tryparsamide" was, however, much used at the Maudsley Hospital. This drug contains 24% of arsenic in organic combination and has a relatively high penetrating power into the central nervous system. The dose is large—one to three grammes dissolved in ten cubic centimetres of sterile distilled water; it is given intravenously because of its bulk. Up to 50 injections or more, in courses of eight to ten weekly doses, may be given. The drug is of value in all forms of neuro-syphilis, including early general paralysis. Amblyopia, however, occurs in about 7% of cases and the drug must then be stopped at once. This generally clears up completely; but some permanent impairment of vision may remain. If this complication occurs it is during the first ten to fifteen injections, never afterwards.

I saw a number of treated patients who had had very good remissions; and, although they seemed quite fit for some form of occupation, close observation often revealed slight elation, a mild euphoria, or a slightly confiding or aggressive manner, but not sufficient to be noticed except by a skilled observer.

#### Narcosis in Mania or Depression.

"Somnifaine" narcosis was a popular method of treatment in the mental hospitals. The purpose of this treatment is to produce sleep for as many hours



as possible day and night for ten to fourteen days. It is most often employed in cases of straight-forward mania or depression, and occasionally for catatonic excitement, but the best results appear to be obtained in depression. The results in agitated depressives are good, especially in the middle-aged. One ampoule (two cubic centimetres) of "Somnifaine" is given by deep intramuscular injection in the outer third of the gluteal region at 8 a.m. and at 8 or 9 p.m. At the same time 10 units of insulin are injected subcutaneously, and 15 grammes (half an ounce) of glucose are given by the mouth. A dose of 7.5 cubic centimetres (two drachms) of paraldehyde is given if the patient has difficulty in going to sleep, and may be repeated; but not less than four hours must elapse between the doses of paraldehyde. In a typical case the routine is the following:

|           |               |              |             |                |
|-----------|---------------|--------------|-------------|----------------|
| 8 a.m.:   | "Somnifaine", | food,        | insulin.    |                |
| 10 a.m.:  | Paraldehyde,  | 7.5 cubic    | centimetres | (two drachms). |
| 12 noon:  | Wake          | for full     | meal.       |                |
| 2 p.m.:   | Paraldehyde,  | 7.5 cubic    | centimetres | (two drachms). |
| 6 p.m.:   | Meal.         |              |             |                |
| 8-9 p.m.: | "Somnifaine"  | and insulin. |             |                |
| 10 p.m.:  | Paraldehyde,  | 7.5 cubic    | centimetres | (two drachms). |

The sister in charge is not allowed to give more than 29.2 cubic centimetres (eight drachms) of paraldehyde in twenty-four hours; but if one of the doses is not needed during the day it may be given at night. If light, easily digested food and plenty of fluid such as glucose lemonade are given, very little acidosis occurs.

The treatment is not unattended by danger, and there is likely to be a mortality rate of 5% unless it is properly carried out; but with proper care death is very uncommon. The patient is visited by a nurse every fifteen minutes; the volume of urine passed in twenty-four hours is noted, the early morning urine is examined for albumin and acetone, and the results are recorded daily on the chart.

#### Insulin and "Cardiazol" Shock Therapy.

With regard to the newer methods of shock treatment by insulin and "Cardiazol", I found that the indications for treatment were far from clear, as is only to be expected from the comparative recency of their introduction.

The technique of insulin treatment is difficult and requires a relatively large and well-trained staff. Even in the Maudsley Hospital not more than sixteen patients can be treated at the same time, so that its sphere of usefulness must always be limited. This, however, does not apply to "Cardiazol".

It is the rule in the Maudsley Hospital to review every candidate for insulin or "Cardiazol" treatment at a special weekly consultation before a decision is arrived at as to which treatment, if any, should be given.

Schizophrenia is a terrible disease, ending in the vast majority of cases in permanent dementia, and

therefore any form of treatment likely to be of value is justifiable; but even in this disease it is advisable to try to determine when shock treatment is most likely to be helpful. Over a period of many years I have seen patients with undoubted schizophrenia recover completely, both in this hospital and in private practice; but they have been very few. In a better environment, as in some of the modern English hospitals, the spontaneous recovery rate is higher, but I can give no figures.

The great value of the newer shock treatment is, however, unquestionable, and many dramatic recoveries have occurred even in what seemed to be hopeless cases. Surprisingly good results have been reported in cases of stupor of long duration;<sup>(3)</sup> for example, one patient, whose illness was of three years' duration, with stupor during the last sixteen months, had a complete remission after thirty "Cardiazol" injections. I also saw a complete remission after insulin treatment in very severe confusional schizophrenia of two years' duration. Nevertheless the vital factor for success in shock therapy is early treatment—that is, treatment within six months of the onset of the illness. I think, however, that it is incorrect to subject an acutely ill patient to this form of treatment in the first few weeks of the illness, because an opportunity should first be given for spontaneous recovery.

If the treatment is to be given, diagnosis must be made early; and in this connexion I should like to draw attention to Mayer-Gross's paper<sup>(4)</sup> on "The Early Diagnosis of Schizophrenia", which is well worth careful study by those who have to deal with such cases.

The experience at the Maudsley Hospital appears to indicate that the slowly progressing hebephrenic is unlikely to benefit from any form of treatment, that insulin is more suitable for the paranoid and confusional schizophrenic, while "Cardiazol" is especially valuable for the catatonic schizophrenic, especially of the stuporose type. The more acute the onset and the more normal the previous personality, the better the results are likely to be.

Melancholia and mania and even hysteria have also been treated by "Cardiazol".<sup>(5)</sup> "Cardiazol" appears to be particularly valuable in involutionary melancholia, and frequently cuts short this chronic and slowly resolving psychosis.

In acute mania and melancholia recovery will take place to a large extent without any specific therapy; and although some special cases may exist in which life is threatened by exhaustion and in which "Cardiazol" treatment may be indicated, in the great majority of cases it is more than doubtful whether it is justifiable.

The administration of "Cardiazol" for anxiety states that are amenable to psychotherapy is a practice which appears to have some followers. I have consistently refused to approve of shock therapy for such conditions, and so far have had no reason to regret this attitude.

A thorough physical examination should always precede shock treatment, and any patient suffering

from general body illness, especially of the heart or lungs, from hyperpnea or pyrexia, should be excluded. With due precautions danger is insignificant; but dislocations and fractures are possible accidents, no matter what care has been exercised. Dr. Aubrey Lewis, deputy medical superintendent of the Maudsley Hospital, in a recent letter, stated that he had heard of the death of a patient whose treatment had been carried out with all the customary precautions. He was also not quite sure whether on the psychological side "Cardiazol" treatment is as harmless as is generally supposed. He said that in view of the damage to the brain that had been demonstrated in animals which had received "Cardiazol", it would not be surprising if there were some intellectual deterioration in these patients. No one had, however, so far reported permanent deterioration of this kind, and even if it did occur it certainly could not be pronounced; but there was some evidence at the Maudsley Hospital that impairment of memory occurred; obviously there had not been time enough for an opinion to be formed as to whether this was transient or not.

Since I received this letter I have seen that Plattner<sup>(6)</sup> has reported seven cases of failure of memory and dementia after combined insulin and "Cardiazol" therapy, and he attributed the dementia to the latter.

Although the indications for "Cardiazol" treatment are not yet as clear as one would like, it would appear that this valuable remedy should not be used indiscriminately, and that the best results are likely to follow careful selection of patients. This should always be made before any are submitted to a form of treatment which to many is a terrifying ordeal.

#### References.

- <sup>(1)</sup> London County Council: *Archives of Neurology and Psychiatry*, 1934.
- <sup>(2)</sup> W. D. Nicol and E. L. Hutton: "After-Results of Malaria Therapy", *Proceedings of the Royal Society of Medicine*, March, 1937, page 18.
- <sup>(3)</sup> J. S. Harris and C. H. Birnie: "Cardiazol Therapy in Stupor", *The British Medical Journal*, Volume II, August 27, 1938, page 449.
- <sup>(4)</sup> W. Mayer-Gross: "Early Diagnosis of Schizophrenia", *The British Medical Journal*, Volume II, November 5, 1938, page 936.
- <sup>(5)</sup> L. C. Cook and W. Ogden: "Cardiazol Convulsion Therapy in Non-Schizophrenic Reaction States", *The Lancet*, Volume II, October 15, 1938, page 885.
- <sup>(6)</sup> P. Plattner: "Amnestisches Syndrom nach Insulin-Cardiazol-Behandlung", *Zeitschrift für die gesamte Neurologie und Psychiatrie*, Volume CLXII, 1938, page 728.

#### RECENT WORK IN THE STUDY OF EPILEPSY.

By GILBERT PHILLIPS.

#### Electroencephalography.

STUDIES on cortical action potentials in man date from Berger's observations in 1929 that in normal individuals, with the eyes closed, electrical disturbances could be recorded from the surface of the brain. In the past ten years the nature of these

cortical electrical changes has been investigated in normal individuals, in both the waking and sleeping state, and the modifications produced by alterations in cerebral blood supply and respiration and the effects of drugs and inert gases have been recorded. The same method has been of great value in the study of the central effects of various types of efferent stimulation (proprioceptive, auditory, tactile). In diseases, electroencephalography has been applied to the study of epilepsy, *paralysis agitans*, schizophrenia, of the effects of "Cardiazol", camphor and other convulsants, and in the localization of cerebral scars and intracranial tumours.

The electroencephalogram, or more briefly the electrogram, has been used extensively in the study of epilepsy by Lennox, Cobb and the Gibbs and their associates at Boston, and is already supplying confirmation of the following statement made some years ago by Lennox and Cobb in a treatise on epilepsy:

Many writers have segregated patients who present no significant abnormality on physical examination, and whose seizures therefore are presumably due to an inherent tendency to react with convulsions, into a group labelled "Essential" or "Idiopathic". Because it seems probable that all patients having seizures from whatever apparent cause possess this susceptibility to seizures in some degree, and because we have no means of determining whether it forms 10% to 90% of the total influences making for seizures, the clinical use of such a term as "essential" only obscures the issue, making discovery of the underlying cause or causes more difficult. Some disturbance of the brain exists in all cases in which seizures occur.

The electrogram in epilepsy has proved already in all the cases investigated that some disturbance of cortical electrical rhythm does exist in all cases in which seizures occur; it provides a means of determining in the intervals between attacks the degree of abnormality of cortical activity and consequently the susceptibility to further seizures. Not only this, but the character of the electrogram will tell clearly whether the patient suffers from *petit mal*, myoclonic epilepsy, major convulsions or one of the psychical variants.

Let us now examine these statements more closely and return first to a description of the normal electrogram.

Normal cortical action potentials form a regular series of waves which can be recorded graphically after amplification. Berger noted that there were several types of such cortical rhythms and that they could be recorded not only from the exposed surface of the brain, but also by suitable electrodes applied to the scalp or by needle electrodes inserted into it. These electrical discharges were not found to be present in the brain at birth, but to develop gradually during the fourth year of life. He described the rhythm subsequently termed the Berger-rhythm or a rhythm, which occurs at a frequency of eight to ten waves per second and has a potential value of some 10 to 50 microvolts; there are a characteristic rate and potential for each individual studied. The potential of this rhythm is just adequate for it to be recorded without amplification by an Einthoven galvanometer with a

<sup>1</sup> Read at a meeting of the New South Wales Branch of the British Medical Association on April 27, 1939.



loose string. Berger also described various other normal cortical rhythms such as the faster  $\beta$  rhythm and the slow waves occurring in sleep, which, however, are not important in the subject under consideration here. Adrian and Matthews at Cambridge noted that the  $\alpha$  rhythm was most easily detected in the occipital region; they confirmed Berger's finding that it disappeared when the eyes were opened or when the subject's attention was engaged. They came to the conclusion that this  $\alpha$  rhythm was due to the spontaneous synchronous activity of neurones in the cortical visual area, which had been left to themselves when the eyes were closed.

In epileptic patients the normal  $\alpha$  rhythm may not be present, but may be replaced by abnormal cortical discharges which Lennox and his associates at Boston have termed the cerebral dysrhythmias of epilepsy. Among these dysrhythmias three chief groups have been observed, each of which is characteristic of a particular type of epilepsy, and corresponds respectively to *petit mal*, *grand mal* and the psychical epileptic variants. Briefly, these three rhythms consist of an alternating sinusoidal curve and a negative spike at a frequency of three per second in *petit mal*, an irregular rhythm varying in frequency between twelve and twenty-five waves per second and rising in amplitude to a crescendo at the clonic stage in *grand mal*, and a square-topped rhythm at two to three waves per second with a superimposed small amplitude high frequency discharge in the case of the psychical variants.

During a seizure the characteristic abnormal rhythm is invariably present, and continuous records taken over several hours have enabled the onset of each seizure to be foretold in many cases, since the dysrhythmia often appeared in the record before there was any evidence that an attack was about to begin. The appearance of a cerebral dysrhythmia, however, does not always herald the onset of an attack, since the dysrhythmia might appear and then be replaced by a normal rhythm without any seizures taking place. These episodes have been termed subclinical or larval seizures.

In other epileptic subjects an abnormal cortical rhythm may be continuously present, and in the intervals between seizures the electrogram will show a dysrhythmia which, although it may not exhibit the characteristics of any particular type of epilepsy, is variable in both the frequency and the potential value of its discharge. Such interval dysrhythmias may be found in one hemisphere only or they may be bilateral. When a seizure is impending, the dysrhythmia develops particular type characteristics which usher in the attack and persist throughout its duration.

Fairly detailed information is available concerning the dysrhythmias of *petit mal* and *grand mal*. In the case of *petit mal* the dysrhythmia is always most readily recorded over the true frontal cortex lying between the prefrontal cortex anteriorly and the premotor cortex posteriorly, and this site is suggested as the focal origin of this type of epilepsy.

It has been noted, too, that in the change from the normal to the abnormal rhythm in *petit mal* there is an increase in the potential value of the waves up to 200 microvolts or more, and this must be interpreted as the result of the synchronous activity of the large number of cortical neurones which have begun to collaborate as an abnormal focus. This synchronism occurs in the prodromal stage of the attack and may be abortive when it occurs as a larval seizure, or it may precede a clinical seizure and appear in the record before the patient is aware of any subjective aura. The close relation of the cortical site of origin of the *petit mal* discharge to the prefrontal autonomic cortex is doubtless responsible for the objective and subjective autonomic disturbances which are so often associated with an attack of *petit mal*. Any extensive activity of cortical neurones, produced either voluntarily by such mental activity as counting or conversation or reflexly from visual, auditory or other afferent sources, will break up the rhythm of the discharge and produce a "silent period" in the record. In the case of the dysrhythmia of *petit mal*, mental activity is particularly appropriate in inhibiting the abnormal discharge. This observation is in agreement with the fact that *petit mal* rarely occurs during concentration or attention, but habitually appears during routine behaviour, such as the taking of meals or rest.

In the case of *grand mal* the prodromal dysrhythmia occurs at a small potential with a frequency up to 25 waves a second. As mental deterioration appears the frequency decreases. The dysrhythmia precedes the clinical manifestations of the seizures and may be abortive and give rise to the subclinical type of seizure, and as might be expected, it is most easily recorded in the region of the motor cortex, but may also be detected in areas anterior and posterior to this situation particularly in the later stages of the attack. During the tonic stage the amplitude of the waves rises and at the onset of the clonic phase the discharge appears in bursts and is succeeded by a period of inactivity in the record, which initiates the stage of stupor and precedes the reappearance of the normal  $\delta$  rhythm.

An interesting observation has been made in cases of periodic major convulsions preceded either by *petit mal* attacks or by myoclonic epilepsy. In these cases immediately succeeding a major convulsion the usual period of "silence" appears in the records and this is followed respectively by increasing dysrhythmia, more and more frequent *petit mal* waves or myoclonic bursts, until finally the next major convulsion takes place. The sequence is then repeated. It is important to realize, in these cases, that the major convulsions are not suddenly precipitated as abnormal episodes on normal cortical activity, but represent the terminations of appreciating dysrhythmias. Each major convulsion concludes an abnormal cortical process which is cumulatively restored between major attacks.

The therapeutic implications are obvious. If the dysrhythmia can be checked early in its develop-

ment and kept at a low level the succeeding major convulsion either does not appear or is delayed. This has now been shown to be the mode of action of the antiepileptic drugs, and the character and periodicity of the particular dysrhythmia concerned are the factors which determine their anticonvulsive potency in each particular case. It has been found also that those conditions which enhance the respiratory exchange of cerebral neurones diminish the susceptibility to seizures. The reverse is also true. Hyperventilation, therefore, by washing out carbon dioxide, will often induce an attack. Convulsions may also be precipitated by inhalation of an inert gas such as nitrogen. The inhalation of pure oxygen or of an oxygen and carbon dioxide mixture will in many cases decrease the amplitude and frequency of a dysrhythmia, and often replace it by a normal  $\alpha$  rhythm. Repeated inhalations of oxygen and carbon dioxide mixtures may therefore prolong the intervals between attacks.

#### Anticonvulsant Dyes.

It has long been known that certain dyes are taken up by the nervous system after trauma or exhaustion.

In 1935, Cobb, Cohen and Ney studied the relation between cerebral anoxia and certain convulsive phenomena and attempted to use neutral red, which had been observed after intraperitoneal injection to be taken up by spinal motor neurones, as an indicator of increased motor activity provoked by convulsant drugs. It was noted, after injection of such convulsant drugs as triphenyl phosphite and camphor, that previous intraperitoneal injections of neutral red had an inhibiting action on convulsions. It was found, moreover, that brilliant vital red, which is relatively non-toxic and has been used extensively in determination of blood volume, had a more potent anticonvulsant action than neutral red. This dye is taken up by reticulo-endothelial cells, particularly in lymph nodes, by the convoluted tubules in the kidneys and by elastic tissue. In toxic doses it may cause albuminuria, and red cells and granular casts may occur in the urine. The reports of two series of patients with epilepsy treated by injection of brilliant vital red are now available. The dye is injected intravenously in a 1% solution; 10 cubic centimetres are given as an initial dose, and subsequently 20 to 40 cubic centimetres are given from twice to four times a week. The urine is examined daily for signs of toxæmia. Within a few days from the commencement of the injection of the dye the sclera and skin show a tinge of redness which deepens as the treatment continues.

The stools, tears and dandruff become red and the optic disks and tympanic membranes bright pink. Each patient is given from 1,500 to 2,500 cubic centimetres of a 1% solution of dye over a period of about three months. The skin colour returns to normal within two months of cessation of treatment. In the early stages of treatment the frequency of convulsions is increased, and then it

is decreased rapidly as the skin colour of the patient deepens. After cessation of the injections the number of attacks may be considerably reduced for long periods.

In seven of one series of ten cases either sustained improvement or complete remission for periods up to two years was experienced. In seven of the second series of thirteen cases sustained improvement took place. The anticonvulsant effect was most pronounced in *petit mal* seizures. The mechanism of the anticonvulsant action of the dye is still uncertain. Two hypotheses have been offered. It is known that both methylene blue and brilliant vital red increase the respiratory interchange of cerebral neurones, and both have an anticonvulsant action. It has been suggested that the oxidative effect is responsible for the reduction of seizures. On the other hand, recent studies on the permeability of the endothelium in dogs have shown that intravenous injection of brilliant vital red definitely reduces the amount of certain substances entering the cerebro-spinal fluid. It was suggested from this that the anticonvulsant action of the dye was attained by alteration in the permeability of the endothelial barrier to "convulsive metabolites".

The writer has used brilliant vital red in one case only. It is not unlikely that there is a real place for brilliant vital red injections in the treatment of *petit mal*.

#### THE THREE-DYE TREATMENT OF BURNS.

By J. B. DEVINE,

Senior Resident Medical Officer, Royal Melbourne Hospital, Melbourne.

In a previous paper on shock in its relation to burns,<sup>(1)</sup> mention was made of the three-dye method of treatment of burns and scalds, a method based on the work of Aldrich.<sup>(2)</sup>

My object in this paper is to describe this method, to present the results of the treatment of a series of patients, and to contrast its use with that of the tannic acid method. A further object is to draw attention to a method of treating burns which is of particular value for industrial and military first-aid purposes, because the solution used is cheap and stable, because it at once substantially relieves pain, and because, when used as a first-aid measure, it commences a treatment which will be carried on in hospital.

#### Clinical Material.

The clinical material comprises a series of thirty-seven cases. In twenty-seven of these the three-dye method of treatment was used, and in ten the tannic acid or tannic acid and flavine method. Included in this series were patients from the bush-fire areas whose histories are reported by courtesy of Dr. Cowling, and practically all the patients with burns



and scalds treated in the Royal Melbourne Hospital during the past year as in-patients, together with a number who were treated as out-patients.



FIGURE I.

Application of the mixture of dyes to a patient who had suffered a sulphuric acid burn. Note the oedematous wheals raised by the burn on the patient's right shoulder.



FIGURE II.

R.S., Case II, two and a half months after he had received a burn with burning "thinners". Within five days of receiving the burn the patient was ambulatory.

The series, however, must not be regarded as statistically significant because of the paucity of its numbers and unconscious selection.

#### The Theory of the Treatment.

The central nervous system of patients who suffer a severe burn or scald is bombarded by impulses from the injured area; and these, according to the size of the area and the degree of the burn, cause more or less serious neurogenic shock. Further, the burnt area, coagulated (and sterile) from the action of the heat, is liable to become infected, and thus all the dangers of infection from an extensive area arise.

For the ideal treatment of a burn or scald an agent is required which will first prevent shock, and second, infection, not only by its antiseptic action, but also by forming over the affected area a pro-

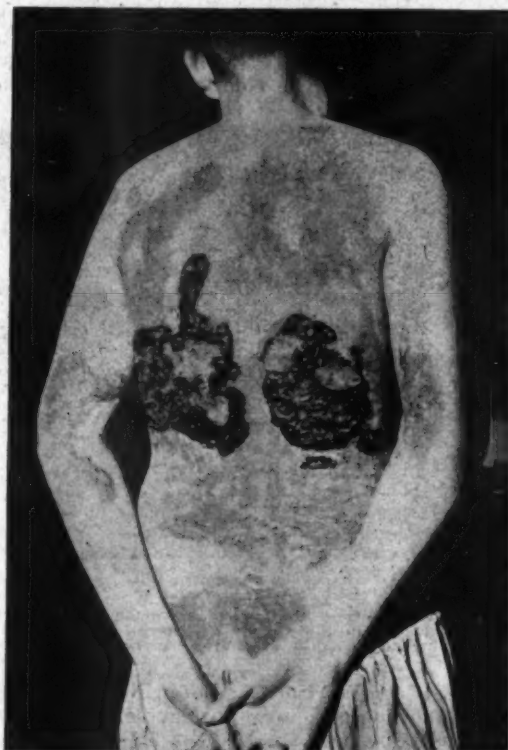


FIGURE III.

R. S., Case II, about four months after the accident. Note the epithelialization which is occurring both from the edges and from skin grafts.

TECTIVE coat, or tan, which will protect it from extraneous infection. This also would serve as a dressing to prevent clothes *et cetera* from touching the burnt area.

Until recently it was thought that this ideal treatment should be something that would cause coagulation of the burnt area with the object of the prevention of shock by lessening the absorption of a hypothetical toxin. However, the work of Underhill, Kapsinow and Fisk<sup>(2)</sup> shows that very little absorption takes place from the burnt area.

Up to the present, the fulfilment of the ideals of treatment has been attempted by the use of tannic

acid. Its employment was followed by a drop in the mortality rate for burns. It has, however, disadvantages. It is a very poor antiseptic. It keeps in solution for a relatively short time, and therefore cannot be always on hand for emergency treatment. It is difficult to produce with it a satisfactory tan. For the last-mentioned reason, and to increase its antiseptic action, it has been used with such substances as flavine and silver nitrate. The tan from tannic acid, when produced, is very apt to crack; and it is difficult, also, to know whether infection has taken place beneath the surface of the "tan". Further, tannic acid will not tan an already infected surface.

A method of treatment which more satisfactorily fulfils the ideal theoretical requirements in the treatment of burns and scalds is one designed by Aldrich;<sup>(2)</sup> in this a mixture of three dyes is used. This three-dye mixture consists of a 1% aqueous

most efficiently bandaged by first-aid operators. This is to be deprecated as first-aid treatment: the oil must be removed by the painful use of spirits before any method for the production of an eschar can be used, and the peeling off of the bandages causes the patient much agony.

**Routine Measures.**—No attempt is made to "clean up" the burnt area by means of a scrubbing brush and soap and water *et cetera*; for it is reasonable to assume that the agent which caused the burn must produce sterilization as deeply as it produces necrosis. Trauma with a nail brush or friction of any sort would be expected merely to force infected material from the surface through the coagulated area; it is inconceivable that such a scrubbing would serve to sterilize the area.

When a large area of skin is involved, a preliminary injection of morphine may sometimes be necessary to relieve pain centrally. When the area

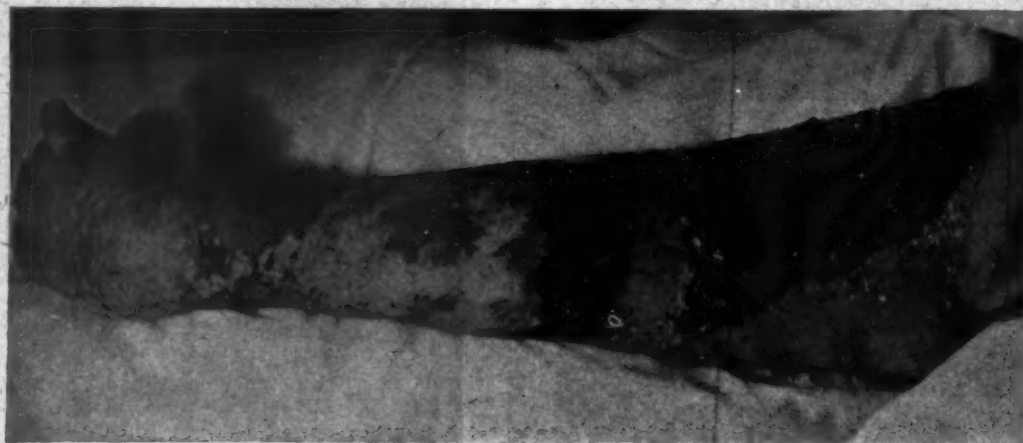


FIGURE IV.

Photograph of the arm of a woman of fifty, six days after the arm had been scalded. (This case was not included in the series.) Note that the area to the right of the line which was treated with the mixture of three dyes has a firm, even tan and has remained uninfected. The area to the left of the line was treated with tannic acid.

solution of gentian violet and of brilliant green, and a 0.1% solution of neutral acriflavine. The mixture is quite stable and can be kept for any length of time. The gentian violet has a selective antiseptic action against Gram-positive organisms and an analgesic action, which usually affords local relief of pain in a few minutes; it also causes an eschar which is not so thick as that produced by tannic acid, but more flexible. The brilliant green and the neutral acriflavine have a special antiseptic action against Gram-negative organisms.<sup>(4)</sup>

#### Technique.

Since the three-dye mixture is a stable solution and can always be kept in readiness in factories, and because it reduces pain almost immediately, it is an ideal first-aid application. The solution should be swabbed over the burnt area and no dressing should be applied.

Many patients present themselves in the casualty room with their burns covered with carron oil and

of the burn is not great, the local relief of pain afforded by the use of the dye is generally sufficient.

Blisters on the burnt area are snipped and the dead skin is removed, no anæsthetic being necessary, and the burnt area is dabbed, painted or sprayed with the three-dye mixture. A second application after about half an hour is usually given, but is not always necessary. Tanning commences immediately after the first application. The tan formed is not so thick as that produced by tannic acid, but it is more flexible.

Delayed blisters appearing within a few days of the burning require snipping and removal of dead skin and a reapplication of the dyes over the area dealt with.

No dressings are used. The patients who are not admitted to hospital are instructed to arrange their clothing so that as far as possible no pressure is applied to the burnt area; and with the same end in view, patients who are admitted into hospital are put into suitable postures and covered with cradles.



**Progress Treatment.**—Patients with minor burns merely require an occasional observation to see whether any softening of the eschar has occurred.

Patients with more extensive burns require careful and continuous treatment. These patients are losing a large amount of fluid from the circulation, both from the burnt area by evaporation and into the tissues. Early and efficient eschar formation does much to prevent this loss. Thus, with this object in view, most of the patients with burns in the series who were admitted as in-patients to the Royal Melbourne Hospital receive their first coat of dye mixture in the casualty department. In many cases of severe burn, however, in which a considerable time has elapsed between the accident and the first application of dye, it may be necessary to restore this fluid loss. This object can be accomplished by the rectal or intravenous administration of saline solution.

The critical period for the patient seems to be between eight and twelve hours after the accident; in one case in the series (Figures II and III, Case II) a blood transfusion seemed to be life saving, though, judging from the work of Underhill,<sup>(5)</sup> it should theoretically not have been given.

Pressor substances such as "Veritol" and "Neo-synephrin" are useful. They raise the blood pressure and may be added to saline solution given intravenously. "Neo-synephrin" brings this about by arteriolar constriction; and therefore must be

used with care, since it may add to the resistance to be overcome by an already labouring heart.

In the later stages of treatment, the question of epithelial repair arises. In from one to three weeks the eschar will come off. If the epithelium has not been completely destroyed, the surface under the eschar will be more or less normal skin. It has been claimed that, as there is less infection with this method of treatment, less epithelium is destroyed, and that therefore less grafting is necessary.

If the epithelium has been completely destroyed, a raw granulating surface remains. In this case it may be necessary to employ skin grafting. In the present series of cases, dressings of cod liver oil were usually employed. In some of these cases, since both the local application of fish-liver oils and their use by mouth have been shown experimentally to shorten considerably the time of healing of burns, cod liver oil emulsion was also given by mouth.<sup>(6)</sup>

During the process of epithelialization care must be taken, by the use of splints, to prevent contractures due to scarring.

#### Cause of Death.

Death in the early stages is nearly always due to shock, and 80% of deaths occur in the first two days.<sup>(7)</sup> After a week the main cause of death is bronchopneumonia. With a view to the prevention of bronchopneumonia, some of the patients were allowed up very early and encouraged to exercise as much as possible.

TABLE SHOWING RESULTS.<sup>a</sup>  
The Three-Dye Method.

| Number. | Age. | Sex. | Where Treated.           | Area. | Degree.    | Agent.                      |
|---------|------|------|--------------------------|-------|------------|-----------------------------|
| 1       | 54   | M.   | In-patient.              | 4     | 2          | Fire.                       |
| 2       | 22   | M.   | Out-patient.             | 2     | 1 and 2    | Fire.                       |
| 3       | 28   | M.   | Out-patient.             | 4     | 1, 2 and 3 | Gas explosion.              |
| 4       | 50   | M.   | Out-patient.             | 1     | 3 and 4    | Gas explosion.              |
| 5       | 37   | F.   | Out-patient.             | 1½    | 2 and 3    | Boiling soap.               |
| 6       | 29   | M.   | Out-patient.             | 4     | 3 and 4    | Gas explosion.              |
| 7       | 24   | M.   | Out-patient.             | ½     | 2 and 3    | Boiling pitch.              |
| 8       | 38   | M.   | Out-patient.             | 3     | 1 and 2    | Electrical.                 |
| 9       | 17   | M.   | Out-patient.             | 1     | 2 and 3    | Hot metal.                  |
| 10      | 42   | M.   | In-patient.              | 2     | 1 and 2    | Electrical.                 |
| 11      | 14   | M.   | In-patient.              | 10    | 3 and 4    | Burning "thinners".         |
| 12      | 26   | M.   | Out-patient.             | 2     | 1          | Gas explosion.              |
| 13      | 31   | M.   | Out-patient.             | 3     | 1          | (Not recorded.)             |
| 14      | 30   | M.   | Out-patient.             | ½     | 1          | Gas explosion.              |
| 15      | 28   | M.   | Out-patient.             | ½     | 2          | (Not recorded.)             |
| 16      | 40   | M.   | Out-patient.             | 2     | 2 and 3    | Molten metal.               |
| 17      | 62   | M.   | Out-patient.             | 2     | 1 and 2    | (Not recorded.)             |
| 18      | 1    | M.   | Alexandra Hospital.      | ½     | 2          | (Not recorded.)             |
| 19      | 40   | M.   | Alexandra Hospital.      | 4     | 2          | Bush fire.                  |
| 20      | 30   | M.   | Alexandra Hospital.      | 1     | 2 and 3    | High tension electricity.   |
| 21      | 18   | M.   | Alexandra Hospital.      | ½     | 2          | Bush fire.                  |
| 22      | 15   | M.   | Out-patient.             | ½     | 1 and 2    | Scalds.                     |
| 23      | 29   | M.   | Out-patient.             | ½     | 1 and 2    | Therapeutic infra-red rays. |
| 24      | 18   | M.   | Casualty.                | ½     | 1          | (Not recorded.)             |
| 25      | 42   | M.   | In-patient.              | 5     | 2 and 3    | Sulphuric acid.             |
| 26      | 45   | M.   | In-patient. <sup>b</sup> | 4     | 2 and 3    | Oil fire.                   |
| 27      | 17   | M.   | In-patient. <sup>b</sup> | 9     | 2          | Acetic anhydride.           |

The Tannic Acid and Tannic Acid and Flavine Methods.

| Number. | Age. | Sex. | Where Treated.                   | Area. | Degree. | Agent.            |
|---------|------|------|----------------------------------|-------|---------|-------------------|
| 28      | 24   | M.   | Out-patient.                     | ½     | 2 and 3 | Scalds.           |
| 29      | 18   | M.   | In-patient. <sup>c</sup>         | 6     | 1 and 2 | Petrol fire.      |
| 30      | 28   | M.   | In-patient. <sup>c</sup>         | 11    | 1 and 2 | Acetic anhydride. |
| 31      | 31   | M.   | Out-patient. <sup>c</sup>        | 2     | 1 and 2 | Bush fire.        |
| 32      | 22   | M.   | Alexandra Hospital. <sup>c</sup> | 4     | 2       | Bush fire.        |
| 33      | 40   | M.   | Alexandra Hospital. <sup>c</sup> | 5     | 2       | Bush fire.        |
| 34      | 40   | M.   | Alexandra Hospital.              | 4     | 2       | Bush fire.        |
| 35      | 34   | F.   | Out-patient.                     | ½     | 1 and 2 | Hot coffee.       |
| 36      | 25   | M.   | Out-patient.                     | ½     | 2       | Molten metal.     |
| 37      | 68   | M.   | Out-patient.                     | 2     | 2       | Crude oil fire.   |

<sup>a</sup> The column headed "Area" indicates in square feet the approximate area burnt. The column headed "Degree" indicates the severity of the burn according to the classification of Dupuytren.<sup>(8)</sup>

<sup>b</sup> Infection occurred.

<sup>c</sup> Patient died.

## Results.

In a series of thirty-seven cases there were two deaths. Both patients who died were men who had been burnt by and had inhaled acetic anhydride; one was treated by the three-dye method, and the other by tannic acid and flavine method. Both died within two days. Of the twenty-seven patients treated by the three-dye method, none became obviously infected, one doubtfully. Of the ten patients treated by tannic acid or tannic acid and flavine, four showed infection. Owing to the small number of cases in the series, this difference in the percentage of infections is not statistically significant; it is, however, suggestive. The results are shown in the accompanying table.

There appeared to be no difference between the amount of shock experienced after tanning by the patients who were treated by the tannic acid and those treated by the three-dye method.

A feature of the follow-up of a number of the patients months after healing of the burns was that a number remarked that they had been much more "nervy" since the accident. And in some of the younger patients the parents noticed changes for the worse in their general disposition. These mental sequelæ seem to be more severe than those following other accidents of a similar severity.

## Summary.

The advantages of the three-dye method of treatment are as follows:

1. The mixture used is inexpensive and keeps indefinitely, and therefore it is always on hand for emergencies. It should thus be of use to those practitioners who only occasionally see patients with burns. In this respect it has advantages over tannic acid, which deteriorates rapidly in solution.
2. The mixture forms a coagulum rapidly and with only one or two applications; and the coagulum when formed is more pliable than that formed by tannic acid.
3. As a result of the analgesic action of the gentian violet, pain is alleviated very rapidly.
4. The mixture is a combination of very powerful antiseptics, and the results in this series seem to show that it is more efficient in preventing infection than tannic acid.

The disadvantages of the method are:

1. It stains clothing and linen. (These stains can be removed by the use of "A.C.M." antiseptic solution.)
2. In very small children and babies the coagulum formed may be too thick and crack at the edges.

## Acknowledgements.

My thanks are due to members of the honorary staff of the Royal Melbourne Hospital for their individual permission to make use of histories of patients who were under their care, and to Dr. Cowling, of Alexandra, for a number of case reports.

## References.

- ① J. B. Devine: "Theories of Shock and Their Relation to Burns", *THE MEDICAL JOURNAL OF AUSTRALIA*, January 7, 1939, page 14.

- ② H. H. Aldrich: "The Role of Infection in Burns: Theory and Treatment with Special Reference to Gentian Violet", *The New England Journal of Medicine*, February 2, 1933, page 399.
- ③ F. P. Underhill, R. Kapsinow and M. E. Fisk: "Studies on the Mechanism of Water Exchange in the Animal Organism: The Nature and Effects of Superficial Burns", *The American Journal of Physiology*, Volume XCV, 1930, page 362.
- ④ R. L. Mason: "Preoperative and Postoperative Treatment", 1927, page 266.
- ⑤ F. P. Underhill: Quoted by Mason in "Preoperative and Postoperative Treatment".
- ⑥ C. B. Fuestow, H. G. Poncher and H. Hammat: "Vitamin C in the Treatment of Burns: An Experimental Study", *Surgery, Gynecology and Obstetrics*, Volume LXVI, 1933, page 622.
- ⑦ P. H. Mitchiner: "The Treatment of Burns and Scalds", *The British Medical Journal*, January 1, 1933, page 27.
- ⑧ Choyle: "A System of Surgery", Volume I, Third Edition, page 251.

## THE FIRST AUSTRALIAN HEALTH OFFICER.

By W. G. ARMSTRONG, M.B., Ch.M., D.P.H.,

Sydney.

JOHN DOBIE, Surgeon, R.N., was appointed as first health officer to the Port of Sydney on December 11, 1938, by the Governor, Sir George Gipps.

Sir George Gipps's dispatch announcing the appointment to Lord Glenelg, of the Colonial Office in London, read in part as follows:

The increase in the trade and shipping of the Port of Sydney and the frequent recurrence of cases requiring vessels to be placed in quarantine have been such as to cause of late much inconvenience for the want of an Officer of Health, who should, as is customary in considerable harbours of all nations, visit every ship on its arrival, examine into the state of health of all on board, and be the organ of the Government in carrying the Quarantine laws into effect. From the want of a professional Health Officer ships are frequently detained at the entrance of Port Jackson on the report of a subordinate officer of customs, and delay frequently occurs in finding a medical officer to send down the Harbour, and when the services of one are engaged, they must of course be paid for by the local Government.

When emigrant vessels are in Quarantine, a similar want has been felt of some professional person, through whom the Government may communicate with the Medical Officer in the Lazaretto, and by whose advice it may be guided; and finally a difficulty frequently has arisen in affording medical assistance to emigrants who have landed or come from the Quarantine Ground in a state to require it.

Mr. Dobie is a surgeon in the Navy of high character and great zeal and activity. He has made three voyages to the Colony in charge either of Convict or Emigrant ships, has served twice as surgeon to flagships, and has been in medical charge of the Naval Department at Trincomalee. He went voluntarily into Quarantine a few weeks ago in order to assist in the medical attendance on the Emigrants by the *William Roger*. In the event of Your Lordship's approving of the appointment of Dr. Dobie, I beg leave to state that it will be proper to apply to the Lords of the Admiralty for their sanction to his employment in the Colonial Service.

The salary of the position was fixed at £300 a year, with the right of private practice.

This dispatch was acknowledged by the Colonial Office in due course and the appointment of Dr. Dobie was agreed to, the Lords Commissioners of the Admiralty having stated that they "see no objection to Mr. Dobie holding that appointment until his services are required in the Navy".

Dr. Dobie did not hold the office very long, for he resigned it after eleven months' tenure. A letter from Sir George Gipps to the Colonial Office, dated February 12, 1840, reports that "Dr. Dobie to my great regret resigned the appointment on 5th November last, in order to become a sheep farmer in a remote district of the Colony".



On November 6, 1839, Dr. Dobie was succeeded by Dr. Arthur Savage, R.N. Dr. Dobie after his resignation appears to have settled down in the Clarence River district and taken to pastoral pursuits. On April 15, 1842, it was stated in *The Sydney Morning Herald* that he was a passenger for London by the ship *Everette*; but he soon returned, for on April 1, 1843, there appeared an advertisement in the same journal, dated from the Australian Club and purporting to be signed by John Dobie, R.N., announcing a dissolution of partnership between himself and George S. Greenway as graziers.

Evidently this dissolution of partnership did not indicate that Dr. Dobie relinquished pastoral pursuits, for his name appears in a very quaint and lengthy communication addressed to Sir George Gipps, to be forwarded to the Colonial Office, by one William Willmington, a resident of Broulee, New South Wales, and dated September 20, 1844. Willmington, it seems, had become insolvent about five months earlier, and was apparently a thoroughly discontented man. His communication to the Governor complained of what he considered to be abuses in the administration of New South Wales. Among the most serious of such abuses he regarded the alienation of large tracts of the national estates, and he enumerated a goodly number of individuals and firms who at the time of writing had become proprietors of large estates in the colony.

Among those mentioned was John Dobie, who was accused of ownership of 128,000 acres of pastoral land. (*Historical Records of Australia*, Series 1, Volume XXIV, page 736.) It does not appear that any action was taken as a result of Willmington's letter.

In February, 1844, Dr. Dobie was appointed to the Commission of the Peace, and in October, 1851, he was appointed a non-official nominee member of the Legislative Council, and continued to occupy the seat till the arrival of representative government in 1855. He was also a member of the New South Wales Medical Board from 1844 to 1864.

In 1853 he was appointed a member of a select committee of the Legislative Council to inquire into the quarantine laws and to report thereon. Mr. Deas Thomson was chairman of this select committee, the labours of which were not productive of any modification of existing quarantine arrangements and conditions, for the committee in its report gave its formal approval to the then existing system and administration.

Eight witnesses gave evidence before the committee, of whom seven were medical men, including the then Health Officer, Dr. Alleyne, and the Medical Advisor of the Government, Dr. O'Brien. The committee, on somewhat slender grounds, reported against the establishment of a board of health.

According to the *Australian Almanac* for 1864, Dr. Dobie retained his seat on the Medical Board until 1864; but his name has disappeared from the issue for the following year, and the present writer has been unable to find any later references to him in either the medical or the lay Press. Towards the close of his life he must have left Australia, for according to an advertisement in *The Sydney Morning Herald* he died in London on July 17, 1866.

It is evident that he was a man of considerable influence in the community, for he belonged to several bodies which had as their objective the advancement of the Clarence River district, and during the years of the early forties he was actively engaged in several movements for the amelioration of grievances in connexion with the Crown lands occupation, and the general safeguarding of the interests of the graziers of the colony.

#### CONGESTIVE HEART FAILURE IN THE LATER MONTHS OF PREGNANCY.<sup>1</sup>

By STANLEY D. MEARES, M.B., B.S. (Sydney),  
F.R.C.S.E., M.R.C.O.G.,

Honorary Assistant Obstetrician and Gynaecologist,  
the Women's Hospital, Sydney.

Congestive heart failure during the later months of pregnancy is an uncommon but serious condition. Heart failure will develop in patients with rheumatic heart disease whether pregnancies occur or not; nevertheless the mortality among married cardiac patients is relatively heavy. Patients with congestive failure in the early months would probably have suffered just as much decompensation without becoming pregnant. Heart failure develops chiefly in the later months.

Let us first consider a few points with regard to the frequency and seriousness of the condition.

##### Incidence.

Heart disease associated with pregnancy is not very common; it probably occurs in 1% to 2% of admissions to obstetric hospitals. Congestive heart failure is of course considerably more uncommon; and it occurs in less than 10% of all cases of cardiac disease in pregnancy.

##### Maternal Mortality Rate.

In the report of the Ministry of Health for 1930<sup>(1)</sup> it is seen that heart disease accounted for approximately 5% of the total maternal mortality. This is perhaps an artificial figure, obtained from misleading death certificates. The mortality rate among cardiac patients in pregnancy is 6%; in one series it was 9% among *primiparae* and 2.6% among *multiparae*.<sup>(2)</sup> Aortic incompetence and mitral stenosis have generally been considered the most serious lesions; but from the statistics the particular valvular lesion does not appear to be of importance, nor does the size of the heart. Auricular fibrillation, however, is especially dangerous and has a mortality rate of 50%.

##### Fœtal Mortality Rate.

Fœtal life is endangered by prolonged decompensation in the mother, and by prematurity. The fœtal mortality rate is not less than 20% for all cases. At the Rotunda Hospital,<sup>(3)</sup> in a series of seven cases in which labour began during decompensation,

<sup>1</sup> Read at a meeting of the Section of Obstetrics and Gynaecology of the New South Wales Branch of the British Medical Association on September 21, 1935.

pensation, only one of the infants survived, a mortality rate of 85%.

#### Report of a Case.

The following is a summary of the history of a case of severe congestive heart failure in the later months of pregnancy.

The patient was aged twenty-nine years. She had had two previous full-time pregnancies, the first three years earlier, the second nineteen months earlier. Pregnancies, labours and puerperia had been normal.

The patient was in the thirty-eighth week of the pregnancy. She had felt well until three months earlier, when she noticed that she tired easily, and became breathless and suffered from palpitation on slight exertion. These disabilities gradually increased, and for the last seven weeks she had remained propped up in bed at home. She had had "growing pains" as a girl, but there was no history of a definite attack of rheumatic fever or chorea, or of previous cardiac affection.

On examination the patient's temperature was found to be 36.8° C. (98.2° F.). The heart rate was 156 per minute, and the rhythm was regular. The respirations numbered 38 per minute.

The patient was propped up in bed, very breathless, cyanosed and anxious. The apex beat was in the fifth space, 11.3 centimetres (four and a half inches) from the mid-line. The heart sounds were regular. There was a systolic murmur at the mitral area conducted to the axilla. The systolic blood pressure was 136 and the diastolic 80 millimetres of mercury. The liver was enlarged and tender, and crepitations were audible at the bases of both lungs. The veins of the neck were engorged and the legs were oedematous. The top of the uterus was 2.5 centimetres (one inch) below the xiphisternum. There was some hydramnios. The fetus was in the left sacro-anterior position. The fetal heart sounds were present.

The patient was treated by complete rest in bed. She was given 2.0 cubic centimetres (30 minims) of tincture of digitalis every four hours. Oxygen was administered.

With rest in bed the cyanosis disappeared and the dyspnoea lessened. On the fifth day the membranes were artificially ruptured. An excessive quantity of liquor escaped, followed by gradual relief of the decompensation. Labour commenced two days later, by which time the pulse rate had slowed to 118 per minute. The contractions were strong and frequent, and the patient became rather distressed during the contractions, although she was restrained from bearing down and fundal pressure was applied. After one hour fifty-five minutes she was delivered of a living female infant weighing 2.7 kilograms (six pounds one ounce).

The third stage of labour was completed uneventfully.

During the first day of the puerperium the pulse rate was 140 per minute, but it gradually decreased to less than 100 in the second week. The puerperium was made interesting only by mild insanity of short duration.

#### Treatment.

A few points in the treatment require comment.

The prophylactic treatment is of paramount importance, as is shown by Crichton Bramwell's series:

Out of 13 cases admitted directly to the wards as "urgencies" there were nine deaths (a mortality of almost 70%), whereas out of 237 patients with heart disease who had been under medical supervision in the antenatal clinic, there were only eight deaths.

This is a mortality rate of less than 3%.

#### Preliminary Medical Treatment.

No matter how severe the congestive heart failure, only bad can come from any obstetrical interference before the heart has been completely rested and

medical treatment has brought about an alleviation of the cardiac failure.

It has been said that "the problem of heart disease in pregnancy is essentially one of prognosis". In these cases we have two prognoses which need to be formed accurately, and it is this estimation which requires much experience and judgement; for they are both extremely difficult of assessment and at times even the combined judgement of the physician and the obstetrician cannot determine them with sufficient accuracy. These two prognoses are, first, the medical—that is, the amount of work of which the heart is capable, and secondly, the obstetrical, or the amount of work it will be called on to perform during delivery.

It is only by this preliminary period of medical observation and treatment that we can form any real opinion of the first or medical prognosis.

#### Assessment of the Strain of Labour.

In order to estimate the second or obstetrical prognosis, that is, the amount of work which the heart will be called on to perform during delivery, we must first ascertain what extra strain is put upon a normal heart in pregnancy and labour.

During the later months of pregnancy the heart is displaced upwards and outwards. Electrocardiographic examinations have shown that the left side of the heart undergoes relative hypertrophy during the first six months, compensated by a relative hypertrophy of the right side of the heart in the last three months. Probably on the right side there is also some degree of dilatation. The minute volume of the heart<sup>(4)</sup> may be increased by as much as 60% by the thirty-seventh week, associated with the increase of blood volume.

Like the long-distance runner, the pregnant woman calls for a very gradual increase of the heart's work over a long period, followed by maximum demands upon it during delivery, corresponding with the final sprint. Again, like the runner after passing the tape, the woman with heart disease frequently shows signs of most distress when the maximum strain is released—that is, in the early days of the puerperium; and it is then that many of the deaths from congestive heart failure associated with pregnancy occur. In one series of 100 patients with heart disease associated with normal rhythm complicating pregnancy,<sup>(5)</sup> there were six deaths in the early part of the puerperium; none occurred during pregnancy and labour.

Of this heart failure in the puerperium Munro Kerr<sup>(6)</sup> states:

Anyone who has had to deal with a large number of cases of cardiac disease complicating pregnancy must have experienced the disappointment of fatalities occurring three or four days after labour. The pregnancy and labour are satisfactorily tided over, all seems well after the delivery, and on the day following, and even on the second and third days, and then failing compensation sets in and nothing can be done to save the patient.

Often collapse at this time is not primarily due to a further failure of the heart, but to the fact that patients suffering from the graver forms of



heart disease are relatively intolerant of infections such as post-operative wound infections and of puerperal sepsis even in its milder forms. Therefore, an important part of the treatment of this collapse is the prophylactic treatment of puerperal sepsis.

The estimation of the work required of the heart during delivery demands an assessment of the duration and difficulty of labour. In congestive heart failure the majority of labours are premature, short and not strenuous.

In the Obstetric Unit of the University College Hospital, 42.9% of the patients with congestive heart failure had premature labours, and at Saint Mary's Hospital 37%.

The short labours may be due to the soft and congested state of the cervix and vagina. Is it possible that cyanosis itself is in some way a further factor in the production of these easy labours? It certainly tends to cause early labours.

#### *The Question of the Termination of Pregnancy.*

After the preliminary medical treatment it is probably best to terminate pregnancy once the period of gestation has exceeded thirty-six weeks. This is especially so in those rare cases in which there is not a satisfactory response to the medical treatment. In those in which there is a satisfactory response it also seems better, if labour has not started spontaneously, to terminate pregnancy at this stage, rather than increasingly to embarrass the heart with the continuance of pregnancy. Pregnancy can be terminated by the induction of premature labour or by Caesarean section.

#### *Induction of Premature Labour.*

Medicinal induction, owing to the distress it would cause the patient, is contraindicated, and, moreover, it is unlikely to be successful at this stage. Induction of labour by bougies or by any other method involving the use of a general anaesthetic is inadvisable, and Lennie<sup>(7)</sup> found that the maternal death rate after such interference was no less than 44%.

Induction of labour by rupture of the membranes does not, however, expose the patient to the same risks. The operation is in most cases easily performed without distress to the patient and without an anaesthetic. It should, however, be used only when obstetrical conditions are normal.

In preeclampsia this method has been advocated and practised by Stroganoff for many years, and recently the American Committee on Maternal Welfare has reported that "it is probable that the simplest and safest method is to rupture the amniotic sac". This method is stated to be more certain and rapid than other mechanical methods; labour is expedited, and the escape of liquor immediately decreases the intraabdominal pressure. All these are important considerations in congestive heart failure.

The risk of sepsis is less than with other types of mechanical induction, for there is less manipulation; and if any infection does happen to be introduced it is introduced inside the amniotic sac and not into

the vascular area between the membranes and the uterine wall. No foreign body is left in the uterus, and there is the flush of liquor following the rupture to cleanse the passages from above.

There are several grave disadvantages of the method: first, the interference with the mechanics of labour; secondly, the risk of prolapse of the cord, especially when disproportion, malpresentation or hydramnios is a feature; third, the fact that when the membranes have been ruptured the fetal head has to bear the brunt of the dilatation, so that there is a risk of intracranial injury, especially to premature infants.

#### *Caesarean Section.*

Caesarean section should never be performed merely to permit of sterilization being carried out at the same time. As an operation Caesarean section has a mortality rate of at least 2%; in a statistical analysis by Banister, based on nearly 4,000 cases, it was 6.6%; and in a series of cardiac cases at the Glasgow Royal Maternity Hospital it was 20%.

On the other hand, in a series of three hundred cases of heart disease in pregnancy at Saint Mary's Hospital, Manchester,<sup>(8)</sup> Caesarean section was performed on twelve patients on account of the cardiac condition; the only death was that of a patient with auricular fibrillation, who died on the tenth day of the puerperium from cerebral embolism.

Generally speaking, when it is necessary to terminate pregnancy in the later months for congestive heart failure, Caesarean section is the best method. One advantage of that method is that we know more accurately beforehand the amount of work required of the heart during delivery. Nevertheless there would appear to be a place for the use of induction of labour by artificial rupture of the membranes, especially when the patient is a *multipara* with a history of previous normal labours, and when pelvic and foetal conditions also indicate that labour is likely to be easy.

Professor Francis Browne, of University College Hospital, speaking of heart disease in pregnancy, has made the following statement:

Provided the head is engaged in the pelvis we are now inclined to favour this procedure (rupture of the membranes) after compensation has been fully reestablished, and provided the pregnancy has passed the end of the thirty-sixth week.

#### *The Management of the Third Stage.*

Collapse during the third stage is probably due to blood being thrown suddenly into the systemic circulation, so distending and paralysing the right auricle. On this account it would be an advantage for the placenta to separate late and for some *post partum* hæmorrhage to occur. Venesection has been advised at this stage in cases of urgency. When labour has been completed, and during the puerperium, there is a great tendency for both doctors and nurses, led astray by a false sense of security, to relax somewhat the previous strict medical supervision and treatment, at the time when these measures are more than ever necessary.

## Sterilization.

Sterilization should be performed at the time of Caesarean section, or some weeks after compensation has been reestablished.

## References.

- <sup>(1)</sup> Ministry of Health: Interim Report of Departmental Committee on Maternal Mortality and Morbidity, His Majesty's Stationery Office, 1930, page 21.  
<sup>(2)</sup> C. Bramwell: "Prognosis of Heart Disease in Pregnancy", *The Lancet*, Volume CCXXVIII, March 16, 1935, page 329.  
<sup>(3)</sup> G. FitzGibbon: "Cardiac Disease in Pregnancy and Labour", *The British Medical Journal*, Volume II, August 13, 1927, page 252.  
<sup>(4)</sup> F. J. Browne: "Antenatal and Postnatal Care", Second Edition, 1937, page 241.  
<sup>(5)</sup> K. Harris: "Heart Disease with Normal Rhythm complicating Pregnancy", *The Lancet*, Volume CCXXXII, March 20, 1937, page 677.  
<sup>(6)</sup> J. M. Munro Kerr: "Cardiac Disease", *The British Medical Journal*, Volume II, August 13, 1937, page 245.  
<sup>(7)</sup> H. A. Lennie: "Pregnancy Complicated by Cardiac Disease", *The Journal of Obstetrics and Gynaecology of the British Empire*, Volume XXXIV, 1927, page 331.  
<sup>(8)</sup> C. Bramwell: "Treatment of Heart Disease in Pregnancy", *The British Medical Journal*, Volume I, June 1, 1935, page 1132.

## BLOOD GROUPS IN QUEENSLAND.

By NOEL R. HENRY, B.Sc.,

Bacteriologist, Brisbane General Hospital,  
Brisbane.

THIS report contains a record of one thousand blood groupings carried out in the pathology department of the Brisbane General Hospital in connexion with routine pretransfusion tests. The technique employed in the testing is also described.

The samples are taken from patients, relatives and friends of both sexes in the Brisbane General Hospital, the Hospital for Sick Children and the Brisbane Women's Hospital, and may therefore be taken as a fairly representative sample of the population.

## Technique.

The sera used in this series of observations were obtained from standard known donors, and carefully checked at frequent intervals. Only donors whose sera had a high titre were used. The sera were preserved with dyes, which, besides acting as anti-septics, also imparted a distinctive colour to the sera; any possible chance of error was thus obviated. They were stored in ampoules containing small quantities, and fresh supplies of serum were obtained at intervals of about three months.

The average group A (agglutinin  $\beta$ ) serum caused definite macroscopic clumping of group B cells in a dilution of 1 in 40, while the average group B (agglutinin  $\alpha$ ) serum caused similar agglutination in a dilution of 1 in 60. This is in agreement with the fact that the average titre of the  $\alpha$  agglutinin is higher than that of the  $\beta$  agglutinin.

The blood was taken from the finger tip, and a few drops were taken into a quill tube containing 3% sodium citrate solution. The cells were always taken to an approximate concentration of 3% (this being maximal for agglutination); this percentage was estimated by the appearance of a rich salmon colour in the tube.

Groupings were made by the "open slide" method. A drop of group A serum was placed on the left-

hand end of a microscope slide and a drop of group B serum on the right-hand end. To each drop was then added a drop of 3% cell suspension. Each was carefully mixed with a platinum needle, which was passed through a flame every time. The slide was then placed in a moist chamber for fifteen to twenty minutes, with occasional mixing by rocking of the slide. All mixtures in which no agglutination occurred were examined by the low power ( $\times 70$ ) of the microscope. This measure, although precautionary, was, however, seldom necessary, as most cells showed distinct macroscopic agglutination in one to two minutes, while the mixing was in progress. The sera used as stock sera were tested in this same manner against known grouped cells for the determination of their titre. The results of the groupings were checked to some extent by the direct "cross-matching" of the patient's serum with the donor's cells, which invariably followed the groupings.

Pseudo-agglutination, or rouleaux formation, was not frequently observed, and, if it occurred, could easily be distinguished from true agglutination by the addition of one drop of saline solution to the mixture on the slide and followed by remixing, when pseudo-agglutination disappeared.

## Results.

Table I gives the number and percentage of the four groups and also the probable error, as calculated from the following formula:

$$P.E.p \text{ (probable error of } p) = 0.6745 \sqrt{\frac{p(1-p)}{N}}$$

In this  $p$  = the observed frequency and  $N$  = the total number of individuals examined.

TABLE I.

| Group. | Number. | Percentage. | Probable Error |
|--------|---------|-------------|----------------|
| O      | 483     | 48.3        | 1.08%          |
| A      | 350     | 35.0        | 1.03%          |
| B      | 107     | 10.7        | 0.66%          |
| AB     | 50      | 5.0         | 0.47%          |
| Total  | 1,000   | 100.0       |                |

It will be seen that the maximum probable error is in the vicinity of 1%, which is negligible.

It is also of interest to note that these figures lend further support to Bernstein's theory, if such is needed. If  $p$ ,  $q$  and  $r$  represent the frequency of occurrence of the genes A, B and R (or O) respectively, then, according to Bernstein's theory,

$$p + q + r = 1 \text{ (or 100\%)}$$

Now, from the above figures,

$$p = 0.245$$

$$q = 0.080$$

$$r = 0.681$$

$$p + q + r = 1.006$$

The figures therefore fully support Bernstein's theory.

## Summary.

The blood of a thousand individuals was tested for A and B reactions, to determine the frequency of these blood groups in the population.



## Acknowledgement.

My thanks for permission to publish these figures are due to Professor J. V. Duhig, Director of the Pathology Department, under whose direction this work was done.

## Reviews.

## SHORT-WAVE THERAPY.

WILLIAM BIERMAN, in his "Medical Applications of the Short-Wave Current", presents a very thorough treatise on the condenser field type of short wave and its uses.<sup>1</sup>

He begins with a very complete and often highly technical description of the physics of electricity, and more especially the short-wave current, with a brief discussion on radio interference and how it may be avoided. Understanding of the text is helped by numerous clear diagrams. He describes a number of experiments to demonstrate the degree of heat that can be produced in various parts of the body by the short-wave current, and goes on to a thorough consideration of the physiological effects of this.

In Chapter V there is an interesting and quite unbiased summing up of the evidence for and against any "specific" action, and the author concludes that so far no effects beyond those that can be attributed to heat have been demonstrated. This agrees with the views of the great majority of workers in England, America and Australia.

The bulk of the book deals with the clinical application of short wave and with a detailed consideration of every morbid condition for which it has been at all extensively used. Here again Bierman's judicial attitude is admirable. He gives the evidence, quotes the authority, makes any relevant comment, and leaves the reader to give his own verdict.

The author pays particular attention to European workers, who are more frequently quoted than American, possibly because he deals almost entirely with the condenser field type, while in America (at any rate until recently) the inductance type of short-wave apparatus was favoured. We think that the author should either have omitted all mention of the latter or have dealt with it much more fully. Fever therapy too is described rather cursorily, and the latest type of cabinet is not mentioned.

The bibliography is full enough to satisfy the most exacting student, and the index is excellent.

## A TEXT-BOOK OF MEDICINE.

THE fourth edition of the "Textbook of Medicine", edited by J. J. Conybeare, has recently been published and brings the book to the end of its first decade.<sup>2</sup> In no essential respect has this text-book been altered. It still presents an admirably clear and simple account of general medicine in a condensed and palatable form. While it is not in any sense an exhaustive or advanced account of the whole realm of medical diseases, it maintains its place as an excellent one-volume manual which has once more been brought up to date. One interesting feature is that a section on psychological medicine has now been added, which is, like the rest of the book, well written and adapted to the needs of the student or general practitioner, who needs to have just as sound ideas about psychological medicine as about any other medical subject. The section on neurology now includes a description of the acute demyelinating diseases of the nervous system, which,

judging by Australian case reports, may be more common in this country than is sometimes realized. Other subjects which have recently come into prominence in medical literature, like regional ileitis and the use of protamine zinc insulin, have been added with advantage. The use of sulphanilamide is, of course, incorporated in the appropriate sections, but the newer pyridine derivatives do not seem to be mentioned. It must be admitted, however, that the exigencies of space always impose considerable limitations on any descriptions of treatment in the smaller text-books of medicine. The same applies to some extent also in the accounts of aetiology and pathology, as for instance in the subjects of Graves's disease and malignant hypertension, to quote two provocative examples. Nevertheless it may be said that within the necessary limitations of a small text-book this book is still well balanced, and may be confidently recommended as an introduction to medicine and as a brief reference book for practitioners, to whom it will give a reliable and uncomplicated account of any conditions they are likely to encounter. The book is as before well produced and of convenient size, though it is a curious reflection that we now regard a book of nearly 1,100 pages as a "small" text-book of medicine, even though it requires seventeen contributors to produce it.

## BABIES.

"BABIES ARE HUMAN BEINGS", written by Dr. C. Anderson Aldrich and his wife,<sup>3</sup> is not "just another baby book" full of detailed directions for the feeding and management of infants, but one which presents the problem of growing up from the infant's point of view and discusses the practical value of the modification of rigid dogmata in favour of more flexible methods. Although Dr. Aldrich is associate professor of pediatrics at the Northwestern University Medical School, he has allowed his wife to shape the course of the book, and admits that any academic theories of his have been well tempered by the salutary experiences of fatherhood. The book begins with an excellent chapter on the newly born infant, which should help the young mother to break through "the traditional aura of pink ribbons" which usually camouflages the infant. There are chapters on "The Baby's Response to the World", on the essential individuality of babies, their orientation, their ways of eating and sleeping, a common-sense discussion of "Do's and Don'ts", and some implications for older children.

This book should have a direct appeal to all thinking parents, both lay and medical, should give them an insight into what their offspring is trying to accomplish in growing up, and how they, as parents, can help him through this phase of his life.

## CLINICAL BACTERIOLOGY.

"CLINICAL BACTERIOLOGY"<sup>4</sup> is planned, as the author, Dr. F. A. Knott, explains, "to remind the reader that it is the clinical significance of bacteriological phenomena, and not how actually to observe them in the laboratory, which should, for the great majority of purposes, remain foremost in his memory". With this plan in view, the author has devoted more of this book to bacteriology in its application to clinical medicine than to detailed description of the morphological and cultural characteristics of individual bacteria, and in dealing with the various bacteria he discusses the infections associated with each. The general arrangement of the book is excellent, and there are many useful tables and illustrations. The latter, however, vary in quality—the reproductions of

<sup>1</sup> "The Medical Applications of the Short Wave Current", by W. Bierman, M.D., including a discussion of its Physical and Technical Aspects by M. M. Schwarzschild, M.A.; 1938. London: Baillière, Tindall and Cox. Medium 8vo, pp. 386, with illustrations. Price: 22s. 6d. net.

<sup>2</sup> "Textbook of Medicine", by various authors, edited by J. J. Conybeare, M.C., D.M., F.R.C.P.; Fourth Edition: 1938. Edinburgh: E. and S. Livingstone. Demy 8vo, pp. 1090, with illustrations. Price: 31s. net.

<sup>3</sup> "Babies are Human Beings: An Interpretation of Growth", by C. A. Aldrich, M.D., and M. M. Aldrich; 1938. New York: The Macmillan Company; Australia: Angus and Robertson. Demy 8vo, pp. 140, with illustrations. Price: 7s. 6d. net.

<sup>4</sup> "Clinical Bacteriology", by F. A. Knott, M.D., M.R.C.P., D.P.H.; 1938. London: J. and A. Churchill Limited. Demy 8vo, pp. 432, with 60 illustrations, including 18 plates. Price: 12s. 6d. net.

photographs are good, but other figures lack distinctness of detail. Methods of examination are dealt with in a chapter termed "Routine Laboratory Methods", and in an appendix which includes a helpful section on the collection of material. There is also a chapter on normal bacteriology which supplies an omission not infrequently noticed in books of this character. The new bacteriological nomenclature is made use of throughout, and we welcome the adoption of the term "opportunistic" to describe the facultative pathogens. Out of a total of four hundred pages the devotion of approximately forty to virus infections draws attention to the growing importance of these agents of disease. The chapter dealing with this group is one of the best in a book which can be strongly recommended, particularly to those interested in bacteriology as applied to clinical medicine.

#### UTERUS MASCULINUS.

Dr. J. A. LEO MAGEE has devoted a period of seventeen years to a consideration of the human genitalia and of their homologues, in any given case, in the opposite sex.<sup>1</sup> After a discussion, based on approved embryological truths, of the accepted homologous relationships of the sexual organs, Dr. Magee elaborates his contention that the prostate gland is the representative in the male of the uterus of the female. The argument appears to be supported by the known facts of embryology, anatomy and physiology, though the statement that some hermaphrodite mammals possess both a uterus and prostate would appear to raise a difficulty. Dr. Magee states that in offering this explanation of the status of the prostate he alone has succeeded in relegating to its proper place a gland which has until now always been an unknown factor in the male genital system. The book is not lacking in old clichés, such as "*fons et origo*" and "conspicuous only by its absence". The author has also a taste for platitudes, of which the following are fair samples: "An infant deprived of its normal period of suckling has been deprived of part of its birthright", "That nipples are present in the male is a matter of common knowledge", "That there are nipples in the male is true. It is equally true that these cannot serve their normal purpose in the male". It is, of course, equally true, though Dr. Magee omits to mention the fact in so many words, that the prostate gland cannot become gravid.

#### SURGICAL HANDICRAFT.

The eleventh edition of Pye's "Surgical Handicraft" commences a new era in the distinguished history of this most useful book.<sup>2</sup>

After the death of Mr. Pye this work was continued by the late Mr. Herbert Carson. The present edition has been produced by a large group of collaborators under the energetic editorship of Mr. Hamilton Bailey, and the text has been thoroughly revised from end to end.

The scope of the book is now so extensive that it constitutes a précis of treatment ranging the whole gamut of general and special surgery, and extending even to the ancillary departments of pathology and radiology. Wherever it is opened the reader finds the clearest description of the modern management of the condition under discussion.

On comparison of the present edition with its immediate predecessor, it is observed that certain criticisms of that edition have been noted and adequate corrections made. As examples of this improvement, the sections dealing

with infections of the hand, with the treatment of fractures, and with injection therapy, have been rewritten so as to bring them into line with modern practice. It is also noticeable that a number of rather obsolete illustrations have been deleted and replaced by clear photographs or line drawings.

In his preface Mr. Hamilton Bailey reflects that only eight books out of every thousand published live for twenty years. Of this present work one can state confidently that so essential should be its possession to all practitioners carrying out any technical procedures that it appears certain to continue its rejuvenated existence for very much longer than the short period of years postulated by Mr. Bailey.

We trust that this work will find its way into the surgery of every practitioner, where it should be a book for the bench rather than for the bookshelf.

#### THE CONTROL OF DIABETES.

The eleventh edition of "The Diabetic Life", by Dr. R. D. Lawrence, of London, is a still larger volume than that of last year.<sup>3</sup> It contains no revolutionary changes in creed or content, but some readable common-sense articles are reproduced with little addition to the previous issue of this work. Though it has become more a doctor's text-book, it is still of great value to patients.

The additional pages are concerned with a slightly larger appendix upon zinc protamine insulin. The use of this substance is now so general that the section describing it will be included with the remaining chapters on insulin therapy. The well-known line ration scheme has been remodelled, its high fat content has been eliminated, and its use in the provision of higher carbohydrate diets has been expanded in practical detail.

Actually there are few grounds for criticism of this standard work, but a few minor points may be mentioned. It has not been our experience, for example, that emaciated insulin-sensitive persons require more insulin after a few days; usually such patients need a progressive reduction in their insulin intake as their condition improves. Dr. Lawrence speaks of "absolute" diabetics or diabetics producing no endogenous insulin, and entirely dependent on injected insulin for life. The existence of these completely depancreatized humans has, however, not been proven.

Dr. Lawrence is apparently a convert to the newer viewpoint concerning blood sugar levels which has been advocated by Himsworth and others, namely, that if the patient is normally healthy and happy, it is not necessary to strive for biochemical perfection, such as severe restriction of blood sugar within the theoretically normal zone. In the treatment of coma alkalis are still advocated, but in moderate doses. No mention is made of the use of isotonic sodium lactate solution in this connexion. It is advocated to test the urine in every case for chloride and to supply salt intravenously until the result of the test becomes positive. The frequent occurrence of coma after sudden cessation of insulin therapy is perhaps insufficiently emphasized.

Dr. Lawrence gives little credence to the hypercholesterolemia theory of diabetic arteriosclerosis. This is in accord with the generally accepted view. The value of diabetic bread and food substitutes has now disappeared since higher carbohydrate diets became the vogue.

Such criticisms as these, however, are insignificant in comparison with the enormous wealth of practical information concerning diabetes contained in Dr. Lawrence's text-book. A generation will need to pass before his work becomes obsolete. As we have stated before in each previous review, the book should be in the possession of every general practitioner, physician and surgeon.

<sup>1</sup> "Uterus Masculinus: A Critical and Constructive Essay Concerning the Genitalia and their Homologues", by J. A. L. Magee, M.B.; 1939. London: H. K. Lewis and Company Limited. Crown 8vo, pp. 96. Price: 5s. net.

<sup>2</sup> "Pye's Surgical Handicraft: A Manual of Surgical Manipulations, Minor Surgery and other Matters Connected with the Work of House Surgeons and of Surgical Dressers", edited by H. Bailey, F.R.C.S.; Eleventh Edition; 1939. Bristol: John Wright and Sons Limited. Demy 8vo, pp. 530, with 362 illustrations. Price: 21s. net.

<sup>3</sup> "The Diabetic Life: Its Control by Diet and Insulin. A Concise Practical Manual for Practitioners and Patients", by R. D. Lawrence, M.A., M.D., F.R.C.P.; Eleventh Edition; 1939. London: J. and A. Churchill Limited. Large crown 8vo, pp. 256, with 18 illustrations. Price: 5s. 6d. net.



ac-  
en  
It  
te  
ar

ly  
or  
n-  
all  
at  
ce  
rs  
ne  
ok

r.  
n  
es  
se  
is  
's

ly  
se  
n  
rs  
ie  
n  
o-

is  
d.  
at  
n  
e  
n  
or  
y  
of  
ot

r  
n  
e  
y  
e-  
e.  
at  
of  
s  
e  
e  
a  
s

r-  
s  
e  
d  
n  
k  
n  
f

A  
y  
o,  
.





## The Medical Journal of Australia

SATURDAY, JUNE 24, 1939.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: Initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction, are invited to seek the advice of the Editor.

### THINGS ARE NOT WHAT THEY WERE.

To the lugubrious and perhaps trite statement that things are not what they were, the correct answer is, of course: "No, they never were." Man is a contrary creature. In his childhood he wants to be grown up, to have a man's physique and to play a man's part. When he is old he sighs for his youth—if only he could enjoy the present with the zest of his younger days, he would be happy. How many of us have dreamed in manhood of our childhood's days and of our early home, remembering it sometimes as an imposing edifice or at least as a roomy structure where we could breathe freely and throw things about. How we have been disappointed and a little worried on visiting the home of our childhood to find it small and not so beautiful. We have felt uncomfortable and wondered vaguely why. Has our memory played tricks with us? Or do we forget that the proportion has altered—that we are bigger than we were when we lived in the old home and that we have enlarged our experience of the world and places and men. Or do we unconsciously magnify the things we have loved? Every one has this last-

mentioned tendency in some degree. And perhaps this is one reason why so many of us hanker for what we have not and long to be where we cannot go. If we are in one place we sigh for another; if we are in the other, no place seems so desirable as the first. We are not always so contrary, for on thinking the matter over a little we may agree that some of the great things, the attractive and unusual things we have seen and known, do not appear to change, except perhaps to become greater and still more attractive. In such a case the mind has become more receptive, the sense of values has changed and we are the richer.

If we look at ourselves as medical graduates of, say, twenty-five or thirty years' standing, we must admit that we all have (to use the *façon de parler* of the psychologist) the things-are-not-what-they-were complex. We remember the teachers of our undergraduate days, the men who were so wise in our eyes, so replete with knowledge, so skilled of hand and ready of wit. There are, we say, none like them now. We remember the incomparable humour and the funny episodes of our "resident" days and wonder whether the "residents" of today fare as well. Even so-called scientific meetings are not as we knew them in the early days of graduation. Then our teachers read erudite papers and discussed one another's statements with a vigour and directness which we seem to miss. Now those of them who happily remain sit by the fireside at home and expect us to do the talking. We do; and in the doing we probably do as they sometimes did when we come to a meeting determined to be heard at all costs, because someone working in our specialty is reading a paper. Lest we be outdone we come, perhaps not knowing what the speaker will say, but with a reply carefully prepared, and at the right moment the notes of the reply emerge from the breast pocket voluminous and impressive; if they savour of the red herring no one seems to mind.

So will it ever be. Things do not change a great deal. It is important that we should allow our imaginations to have free play, that we should be able to smile at our own foibles and our own vagaries and that we should be content to be our

age. The not-so-old among us will not then be wise in our own conceit, but will cede wisdom to those who are older. The not-so-young will walk warily, for they may be walking unawares with the future giants of Australian medicine. And both not-so-old and not-so-young will know that the time will come when they, too, will be spoken of as belonging to the good old days and that then, as now, things will never be what they were.

### Current Comment.

#### THE SCLEROSING OF LARGE VARICOSE VEINS AT ONE SITTING.

IN the United States of America the formation of special clinics or departments for the exclusive study and treatment of peripheral vascular disease has been encouraged in many centres. Naturally, a great deal of attention has been accorded to those affections of the peripheral arteries which have earned for themselves a reputation for progressiveness and intractability, such as Buerger's disease and *endarteritis obliterans*. At such a clinic in Youngstown, Ohio, Samuel H. Sedwitz and Myram H. Steinberg have interested themselves in modifications of the injection treatment of varicose veins, which was first attempted by Provat in 1851. A universal adoption of the obliteration of venous varices by sclerosing fluids has taken place in the last two decades. In the usual methods employed hitherto such irritants as sodium salicylate, quinine, and salts of cod liver oil have been used, with or without the incorporation of a local anæsthetic. Very large veins have been considered unsuitable, and several injections, separated from each other by an interval of time, have been required. Recanalization is common, or too early dilution of the irritant by returning blood has nullified the desired effect.

Preceded by appropriate experimental studies, the method followed by Sedwitz and Steinberg has been in brief to ligate the great saphenous vein under local anæsthesia at the point where it penetrates the roof of the saphenous opening, and at the same time to inject a large volume of 2% sodium ricinoleate solution into the distal end of the cut vein. The small tributary veins which join the main saphenous vein at this level are also ligated, but extensive dissection is undesirable, as lymphatic blockage may ensue.

Before a patient is considered suitable for this procedure, satisfactory responses to the Trendelenburg, Perthes and Collens-Wilensky tests are required. The Trendelenburg manoeuvre is well known. It indicates the patency or otherwise of

the deep veins. The Perthes test shows whether or not the femoral vein is patent. With the patient standing, a tourniquet is placed above the knee, just tight enough to cut off the superficial venous return. The patient then exercises the leg. Pain is experienced, and the superficial veins will remain distended if the deep veins are closed. In the Collens-Wilensky test the patient lies down and the foot is elevated until the superficial veins are collapsed. The foot is then quickly lowered over the side of the bed, and the time for filling of the veins on the dorsum of the foot is noted. The normal time is from five to seven seconds.

The authors have compared their method with that of multiple injection of various sclerosing solutions. In the latter group, that is the group treated by traditional methods, recurrence or canalization took place in 38.5% of cases within two years. The former group, treated by the authors' method, with one injection of sodium ricinoleate (average 48 cubic centimetres) and ligation, comprised 78 patients; no recurrences were observed after one and a half years. In a further batch of 31 patients, treated by saphenous ligation and the injection of an average amount of 17 cubic centimetres of sodium ricinoleate at one sitting, no recurrence was observed after one year. Chronic ulcers also healed rapidly after this treatment. Accompanying illustrations of limbs, rendered misshapen and swollen with large varicosities, reveal a return to normal contour within two months.

After each injection a painful period of general periphlebitis occurs, which lasts from four to seven days. Sedwitz and Steinberg assert that the pain and redness are quickly dispersed by ionization with mecholyl (acetyl  $\beta$ -methylcholine chloride) and application of intermittent venous compression to the limb. Similar iontophoresis is applied to varicose ulcers after they have been covered with "Vaseline" gauze.

There is no doubt that a distinct step forward takes place with the introduction of a more satisfactory, certain and durable sclerosing agent for varicose veins. Former methods were usually useless for large veins, and many injections were necessary. In the present technique a single visit is necessary, the patient remains ambulatory and quite gross varicosities are sealed. It is a little too early to say permanently, but this practice, first advocated by Faxan in 1934, is certainly gaining ground rapidly overseas. It merits the close attention of surgeons and practitioners who have the care of patients with large varicose veins or indolent varicose ulcers.

#### TRANSMISSION OF SYPHILIS BY TRANSFUSION.

TRANSFUSION of blood has become a very commonly employed therapeutic aid. In the United States of America, where, as available figures seem to show, syphilis is very much more prevalent than in Australia, the danger of transmission of syphilis

<sup>1</sup> American Heart Journal, June, 1938.



by blood transfusion is a very real one. Several instances of transfusion syphilis have been recorded. Samuel H. Averbuck adds another case to these published reports.<sup>1</sup> The patient was a woman of sixty-one years of age, suffering from an unusual form of Hodgkin's disease. On several occasions during her illness transfusions of 500 cubic centimetres of citrated blood were given. On June 24, 1937, a transfusion of 500 cubic centimetres of citrated blood was given by the gravity method. Both donor and recipient were in Group II A (Jansky) and were compatible in the cross-agglutination test. No immediate reaction to transfusion was observed, but five weeks later the patient noticed large, indurated, tender, somewhat raised lesions on the fingers, shoulders, abdomen and back. Some of these persisted as shallow, moist, indolent ulcerations. Intractable and severe headache, which was worse at night, sore throat, a slight cough, generalized body and bone aches and pains, and elevation of temperature characterized the clinical picture. A few days later a diffuse maculo-papular rash appeared. The diagnosis of syphilis in the secondary stage was confirmed by Wassermann and Kahn tests. After four injections (totalling 3.5 cubic centimetres) of bismuth sub-salicylate had been given intramuscularly, the rash faded. The larger shallow ulcerations healed, the headache, cough and generalized aches and pains disappeared, and the temperature subsided.

The donor was recalled, his blood was tested and found to react strongly to the Wassermann and Kahn tests. Investigation showed that on June 11, 1937, two weeks before his blood was taken for the transfusion under discussion, it had yielded no reaction to the Wassermann test. No semblance of a rash or of a genital lesion or scar could be found. His blood donor's book was, of course, taken from him, and after confirmatory serological tests antiluetic treatment was begun and is continuing at present.

All the characteristics of transfusion lues—the usual incubation period, the absence of primary lesions, the appearance of the secondary stage of the disease—were present in this instance. The clinical examination, according to Averbuck, made it quite clear that the patient was not luetic before the transfusion. Her husband's blood, examined during a fatal illness some years previously, had not reacted to the Wassermann test. Moreover, the illness she contracted five weeks after receiving blood from a donor later proved to be syphilitic was the secondary stage of syphilis, and it appeared five weeks after the inoculation of infected blood.

The author discusses the question of donor control. The instance of transfusion syphilis here recorded occurred in spite of regulations requiring blood donors to undergo Wassermann tests every three months. As Averbuck points out, the only sure safeguard against such an accident is

immediate pre-transfusion testing of the serum of all donors by a rapid, sensitive flocculation test, such as the Kline or the Kahn test. This means a little more time and trouble, but the more the matter is considered, the more certain is it that such a safeguard is necessary. In the present instance the unfortunate victim was already afflicted with an incurable and fatal disease. Consider the tragedy of such an accident in the treatment of a young and healthy person! In addition to the performance of a flocculation test, every donor should be subjected to an adequate physical examination. Transfusion syphilis is transmitted by blood from donors who are in the incubation period or in the primary or secondary stages of the disease. There is some evidence that the use of blood from donors with tertiary syphilis is without danger of transmission of the disease; but it is, of course, highly undesirable to use such persons as donors.

There is probably much less risk of transfusion syphilis when voluntary donors are used than when the donor is paid. The use of stored blood would make it possible to have complete serological investigation; but then the use of stored blood seems at present to have other disadvantages, such as the death of the leucocytes, the diminution in prothrombin content, and the occurrence of immediate reactions, which becomes more likely the longer the blood is stored.

## British Medical Association News.

### SCIENTIFIC.

A MEETING of the New South Wales Branch of the British Medical Association was held on April 27, 1939, at the Robert H. Todd Assembly Hall, British Medical Association House, 135, Macquarie Street, Sydney, Dr. G. M. BARRON, the President, in the chair.

#### Epilepsy.

Dr. GILBERT PHILLIPS read a paper entitled "Recent Work in the Study of Epilepsy" (see page 922).

Dr. E. L. SUSMAN said that epilepsy, or, as the modern fashion had it, the epilepsies, was one of the minor catastrophes of life. It was a disease that not only handicapped and afflicted the sufferer himself, but impinged on and altered the lives of the patient's contacts and relatives. It was the perfect medical example of the Damoclean sword. Historically it was a very ancient disease, and had been at once the bugbear and the despair of generations of practising physicians. Dr. Susman therefore needed to make no apology for reviewing the present knowledge of the malady, and its selection for discussion by the Section of Medicine was a particularly fortunate one.

Dr. Susman then said that he proposed to say a few words on pathogenesis and treatment. Dr. Phillips had sketched the discovery of the Berger rhythm, the subsequent studies of the rhythm by the Cambridge workers, Adrian and others, and the pioneer investigations of the Boston school, notably by Lennox and Dr. and Mrs. Gibbs, on the modifications and abnormalities of the rhythm in epileptics. Encephalography had taught many interesting facts about epilepsy. The Berger rhythm was specific for the individual, like finger-prints or the electrocardiogram. In epilepsy the electrogram told the type of attack.

<sup>1</sup> Journal of the Mount Sinai Hospital, January-February, 1939.

Secondly, it proved the presence of subclinical attacks. Thirdly, and Dr. Susman wished to stress what Dr. Phillips had said on this point, mental activity broke up the abnormal rhythm. This observation agreed very closely with the well-known clinical fact that mental preoccupation was a great antidote to epilepsy in general and *petit mal* in particular. The pattern of the seizure was specific for the individual, and the pattern repeated itself in successive seizures. Excitement, awakening, a fright, a shock *et cetera*, modified the normal cortical rhythm and placed a strain on the rate-regulating mechanism of epileptics which they were unable to meet. Dr. Susman referred to the practice of treating sufferers from epilepsy by doses of medicine administered three times a day, when the patients possibly had had fits only between certain stated hours, perhaps between five o'clock and nine o'clock in the morning. He pointed out that a much better plan was to have the patient awakened at one o'clock and given a dose of medicine, so that the medicine would have a chance to prevent the epileptic seizure.

Dr. Susman went on to say that, according to the modern view, the essential pathogenesis of epilepsy was a paroxysmal cerebral dysrhythmia, and the epileptic fit was a "brutal" discharge (to use Hughlings Jackson's own adjective) of cortical energy, a discord of movement (Gordon Holmes). He raised the question whether this thesis was open to criticism. The basic problem was whether the abnormal waves were the ultimate cause of epilepsy or whether they were a part and parcel of the epileptic phenomenon, a refined 1939 physical sign of the disease. He thought that work done on allied diseases, such as migraine, might settle the question. Dr. Susman referred to auricular fibrillation, which was in some respects similar to epilepsy, in that its ultimate cause was unknown. When electrocardiography was first introduced it was thought that the electrocardiogram would supply all information about auricular fibrillation; but such had not been the case. The same was true of encephalography in relation to epilepsy.

Dr. Susman then spoke of the treatment of epilepsy. He said that there was too much restriction of the activity of epileptic subjects and that use should be made of the periodicity factor to allow of their living reasonably normal lives. A new drug had been introduced recently. This was "Dilantin", a drug with a urea base, evolved by a process of chemical juggling. It had been used in *grand mal*, and tests made had indicated that a fair percentage of patients were much relieved. The adult dosage was from 0.2 to 0.6 gramme per day; the optimum dosage was then found by the method of trial and error. There were occasional toxic reactions, some major, some minor. Of the minor toxic manifestations, the most important were dizziness, ataxia, diplopia, tremor, nausea and dimness of vision. The most serious major manifestations were purpura and exfoliative dermatitis.

Dr. Susman referred to the absence of colonies for epileptics in Australia. Colonies had proved to be very successful in other countries, and they were a necessity. Dr. Susman said that having heard Dr. Phillips's lecture, it would be ungracious of him not to refer to the use of surgery in epilepsy. He felt that surgical treatment should not be undertaken in traumatic epilepsy unless there was some physical sign other than fits. There was no panacea, and every case of epilepsy had to be considered on its merits. In conclusion, Dr. Susman expressed the hope that new views on the psychogenic epilepsies would be heard; they were a most important aetiological factor in this difficult disease.

PROFESSOR HARVEY SUTTON said that he proposed to give an estimate of what epilepsy meant to the community. In a large number of school children, one in one thousand was found to suffer from epilepsy. As the peak was somewhere in the adolescent period, the total number of epileptics in the whole community would reach a much higher figure. In Australia, from 1931 to 1936, 1,106 people were stated to have died from epilepsy in 370,000 deaths, or one in about every 330. While it was true that the death rate was higher among epileptics, no information as to epileptics who had died from other diseases was

given, and it was known that the epileptic was particularly susceptible to tuberculosis. It was possible that the figures quoted approximated to the real figures. On a conservative basis Professor Harvey Sutton would estimate the number of epileptics as one in 500 of the population. In the annual report of the Department of Mental Hospitals for 1935 it was stated that 905 patients in the State institutions had epilepsy; that meant that one in twelve of all the mental hospital population was epileptic. It would be seen that epilepsy supplied a very steady stream of patients. Thus, even though epilepsy was a "minor disaster", it was a major social problem. Professor Harvey Sutton referred to Dr. Susman's remarks about epileptic colonies. He said that there was only one definite epileptic colony in Australia; that was Masoomedowns, near Melbourne. This was the nearest approach to an ideal method of segregation of epileptics. The patients there lived a very happy life, visiting, playing cricket matches, gardening, playing tennis, and having their own moving picture shows; it did seem a fact that the frequency of their fits was diminished, partly because of the freedom from mental stress that such a colony represented. There, if a patient had a fit, no one worried, because it was nothing unusual—everybody did it. Professor Harvey Sutton pleaded for consideration of the establishment of a proper epileptic colony in New South Wales. He said that many of these people had a very unhappy life. Their life was grossly interfered with, and quite a considerable proportion of them did very much better in a colony by themselves. In addition, there was the problem of the child who had become epileptic in early life; he nearly always became a mental defective and required to be dealt with as such. The problem of epilepsy was a very serious matter; the figure one in 500 represented something like 5,400 epileptics in New South Wales and 14,000 in Australia.

DR. J. A. L. WALLACE said that he had been greatly interested by Dr. Phillips's lecture. The research work he had reported would be of great value in the diagnosis and treatment of epilepsy. On one point Dr. Wallace asked for further information; Dr. Phillips had given no indication of the nature of the apparatus used in encephalography. This would have been interesting. Dr. Wallace would like to know more about it, because it might be useful to the medical officers of the mental hospitals of New South Wales. Dr. Wallace referred to Dr. Phillips's remarks about the beneficial effect of brilliant vital red on sufferers from *petit mal*. Dr. Wallace said that he was afraid that the discoloration of the patient by the dye would be a drawback; the patients in the State institutions would object to being coloured pink. Dr. Wallace went on to say that of the 900 odd epileptics in the mental hospitals, approximately 450 were mental defectives. The rest were patients with epileptic psychoses. Dr. Wallace thought that his colleagues would be glad to have Dr. Phillips's advice and suggestions. He would be prepared to give facilities for any research work that Dr. Phillips could suggest.

DR. LOREMER DODS said that he had been very interested in Dr. Phillips's reference to the electrical dysrhythmias which occasionally followed the prolonged use of phenobarbital. He pointed out that the great majority of children could take relatively large doses of phenobarbital for years without any ill effects, but occasionally a child would become more irritable and have more fits while taking this drug. If, as often happened, the dose of phenobarbital was increased with the object of overcoming their irritability, the child might reach a state of irritability approaching mania. This state of intense irritability was relieved by the withdrawal of the phenobarbital and returned if the drug was tried again.

Dr. Dods expressed his surprise at Dr. Phillips's optimistic references to the ketogenic diet as a therapeutic measure. He realized that confident reports about the value of this form of treatment had recently reappeared in the American literature; but his own experiences of this measure in childhood had been most unsatisfactory. Dr. Dods had found that a diet with a ketogenic-antiketogenic ratio of 3 or even 3.5 to 1 was necessary to



maintain a ketosis in most children, that the children quickly became adjusted to this ratio with a consequent subsidence of their ketosis, and that it was extremely difficult to persuade a child to take a diet of this type during the summer months in this country.

Dr. RICHMOND JEREMY said that he wished to ask a question, whether electroencephalography had been used in migraine, and to say that he had recently read a report in *The Proceedings of the Mayo Clinic* about the use of oxygen in the treatment of migraine. It had been stated that if a patient was made to breathe 100% oxygen an attack of migraine would be aborted.

PROFESSOR A. N. BURKITT said that he had gone to the meeting in order to learn, and he had learned quite a lot. He had remembered a story told to him by Professor Arien Kappers, of the Brain Institute of Amsterdam. Professor Kappers had told him that when they got hold of a new theory and were not certain of its truth, they published it first of all in Dutch, because no one outside Holland could understand it. The Dutch scientists thrashed it out, and then they published it in French or German. Professor Burkitt remarked that Dutch clinicians had recently held a meeting on the relation between the hypothalamus and autonomic nervous system and epilepsy. He said that he was very interested in this relationship, chiefly on account of its effect on metabolism.

Dr. Phillips, in reply, said that he agreed entirely with the substance of what Dr. Susman had said. The proper treatment of epileptic patients was not to keep them constantly under sedation. It was not even necessary to awaken patients at one o'clock, as Dr. Susman had suggested, when they were known to have fits in the early morning. If the patient was made to stay awake at night and allowed to sleep in the day-time, at first the nocturnal attacks ceased; but later the attacks returned, now in the afternoon. This method succeeded only in effecting a reversal of rhythm. With Dr. Susman's remarks about neuro-surgery and epilepsy Dr. Phillips was in agreement, provided that Dr. Susman would regard a focal fit as one of the indications for operation. Encephalography would not always give satisfactory evidence of cerebral scars; German recently stated that in 30% of his cases there was no encephalographic evidence that scar tissue was present, although at operation a scar was found either macroscopically or histologically. If a cortical scar was present, its excision was useless if it had been there long enough for a fixed epileptic rhythm to be formed. This rhythm could not be affected by operation, and in many cases the patient was far worse afterwards. Referring to the statements made about epileptic colonies by Dr. Susman and Professor Harvey Sutton, Dr. Phillips said that Australia lagged far behind other countries. There were many such colonies in Europe, and such colonies had been operating in Great Britain for about thirty years. In Australia even wealthy people had nowhere to send their epileptic offspring for institutional care, both medical and occupational. The home was no place for these children, and there was no opportunity for their education on satisfactory lines. That meant that the mental status of adolescent epileptics was further depreciated by restriction of interest. In reply to Dr. Wallace, Dr. Phillips said that the apparatus required for encephalography was very complicated. He described the instrument and said that an ordinary ink-writing oscillograph was used, and the instrument was constructed so that several leads could be taken off and simultaneous records could be taken from more than one cortical area.

Dr. Phillips had been interested in Dr. Dods's remarks concerning the effect of sedatives on children. Possibly different sedatives would have different effects on the different dysrhythmias. Dr. Phillips said that he was not trying to resuscitate the ketogenic diet; he had quoted what he had read during the preceding few months. He did not know enough about it to make any further comments. In reply to Dr. Jeremy, Dr. Phillips said that he did not know of any encephalographic records taken in migraine, and he had not seen oxygen used in its treatment. Dr. Phillips was interested in Professor

Burkitt's remarks concerning the relationship between the hypothalamus, the autonomic nervous system and epilepsy, and said that when the hypothalamus in animals was stimulated electrically movements of the extremities were often seen. It was not unlikely that the hypothalamus might act as an exciting zone for some types of cerebral dysrhythmias.

Dr. GEORGE BARRON, from the chair, thanked Dr. Phillips for his lecture.

#### QUEENSLAND BRANCH NEWS.

The following information on the Medical Fees Tribunal recently established by the Queensland Branch of the British Medical Association is published for the information of members.

The constitution and rules of the tribunal are as follows:

1. The Medical Fees Tribunal shall be a body appointed by the Council of the Queensland Branch of the British Medical Association at its first meeting every year.
2. The tribunal shall consist of five members, with a quorum of three.
3. The tribunal shall have power to coopt, but no coopted member shall have any voting power in the tribunal.
4. Vacancies occurring on the tribunal shall be filled by the council of the Branch at its first meeting after such vacancies occur.
5. At its first meeting each year the Medical Fees Tribunal shall appoint a chairman and an honorary secretary from amongst its members.
6. The duty of the chairman is to preside at all meetings of the Medical Fees Tribunal.
7. The honorary secretary shall: (a) receive from the honorary secretary of the Branch all matters sent on by him for consideration by the tribunal; (b) attend all meetings of the tribunal; (c) present the business of the meeting to the members present; (d) keep minutes of proceedings of each meeting in a minute book to be kept at the office of the Branch of the British Medical Association; (e) be responsible for safe keeping of papers and documents under his care; (f) forward reports and findings of the tribunal to the honorary secretary of the Branch council.
8. Meetings of the tribunal shall be held at such times as the tribunal may from time to time determine, or a meeting may be called by the chairman or honorary secretary by notice in writing.
9. The Medical Fees Tribunal may act only on an official request from the council of the Branch.
10. The function of the Medical Fees Tribunal is to advise the council of the Branch as to the justness or otherwise of fees charged in any case placed before them, after all available information on the matter in question has been considered.
11. For the purpose of ascertaining the facts in the matter in dispute, the Medical Fees Tribunal may ask the Branch to undertake certain investigations, or the tribunal itself may take such steps as may be found necessary to secure such information desired.
12. The Medical Fees Tribunal may only consider and advise on specific cases and cannot lay down general rules or principles with regard to fees in medical practice.
13. The Medical Fees Tribunal shall not be called upon to determine questions of policy with regard to medical fees.
14. In any case under consideration the Medical Fees Tribunal may at its discretion communicate with either or both parties to the dispute. Such communication may be for the purpose of acquainting them with certain facts or obtaining further information.
15. The failure to exercise this right on the part of the Medical Fees Tribunal shall not be held in any way to debar them from reaching a decision in the matter.



16. The tribunal shall after due investigation present to the Branch council:

1. A report of the facts as found by the tribunal from the evidence placed before it.
2. A finding to the council in one of the following terms:
  - (i) That the evidence before the tribunal was insufficient to enable it to arrive at a decision.
  - (ii) That the evidence of the parties concerned was so contradictory as to render it impossible to arrive at a decision.
  - (iii) That the fee charged was less than a just fee should have been.
  - (iv) That the fee was fair and just.
  - (v) That the fee charged was higher than was warranted and that the just fee for such service is £...
  - (vi) That the fee charged was considerably higher than was warranted and that the just fee for such service is £...
  - (vii) That the fee charged was such as to warrant the council taking disciplinary action in the matter, and that the just fee for such service is £...
  - (viii) That the tribunal is not satisfied that the patient is liable for payment of the bill.

## Medical Practice.

### THE POLICE OFFENCES AMENDMENT (DRUGS) ACT OF NEW SOUTH WALES.

THE following memorandum has been received from the Commissioner of Police of New South Wales in regard to the duties of medical practitioners, veterinary surgeons, dentists and pharmacists under the provisions of the *Police Offences Amendment (Drugs) Act, 1927*, and the *Police Offences Amendment (Drugs) Act, 1934*.

1. By the *Police Offences (Amendment) Act, 1908*, and its amendments, and the regulations made under them, certain obligations in regard to the giving of prescriptions, keeping of records and dispensing of drugs, devolve on medical practitioners, veterinary surgeons, dentists and pharmacists. The present memorandum has been prepared to assist the members of these professions in discharging their obligations, and contains a summary of the main provisions of the acts and regulations in which they are specially concerned.

#### Drugs Involved.

2. The drugs to which the *Police Offences (Amendment) Act* applies are morphine, cocaine, ecgonine, and diamorphine (commonly known as heroin) and their respective salts, and opium, and any preparation, admixture, extract or other substance containing not less than one-fifth per centum of morphine or one-tenth per centum of ecgonine, cocaine or diamorphine.

For the purpose of the foregoing provision, the percentage in the case of morphine shall be calculated as in respect of anhydrous morphine.

Percentages in the case of liquid preparations shall, unless other provisions in that behalf are made by regulations under this part of this act, be calculated on the basis that a preparation containing one per centum of any substance means a preparation in which one gramme of the substance, if a solid, or one millilitre of the substance, if a liquid, is contained in every one hundred millilitres of the preparation, and so in proportion for any greater or less percentage.

By proclamation the *Police Offences (Amendment) Act*, as amended, was made to apply to:

*Barbituric Acid* and any preparation, admixture, extract or other substance containing not less than one-fifth per

centum of barbituric acid, whether described as Veronal, Medinal, Dial, Luminal, Sodium Luminal, or by any other trade name, mark or designation;

*Indian Hemp* (*Cannabis indica*), including the resins obtained from Indian hemp, and any preparation, admixture, extract or other substance, containing not less than one-fifth per centum of Indian hemp; and

*Paraldehyde* and any preparation, admixture, extract or other substance containing not less than one-fifth per centum of paraldehyde.

#### Preparations Excepted.

3. The act shall not apply in respect of the preparations, admixtures, extracts or substances for the time being included in the Second Schedule, viz.:

*Cereoli Iodoformi et Morphinae*, B.P.C.

*Emp. Opti*, B.P., 1898.

*Lin. Opti*, B.P.

*Lin. Opti Ammon.*, B.P.C.

*Pasta Arsenicalis*, B.P.C.

*Pil. Hydrarg. c. Opio*, B.P.C.

*Pil. Ipecac. c. Scilla*, B.P.

*Pil. Plumbi c. Opio*, B.P.

*Pil. Digitalis et Opti Co.*, B.P.C.

*Pil. Hydrarg. c. Cret. et Opti*, B.P.C.

*Pulv. Cretæ Aromat. c. Opio*, B.P.

*Pulv. Ipecac. Co.*, B.P. (Dover's Powder).

*Pulv. Kino Co.*, B.P.

*Tabletæ Plumbi c. Opio*, B.P.C.

*Ung. Gallæ c. Opio*, B.P. (gall and opium ointment).

*Ung. Gallæ Co.*, B.P.C.

#### Authority for Prescribed Persons to Procure and Have Drugs.

4. Until in any particular case such authority is withdrawn, the following are authorized to procure and be in possession of any drug for the purpose of their profession or employment, subject to the conditions and restriction prescribed by the regulations, but such authority does not entitle any person to use any drug for any purpose other than that of their profession or employment:

- (a) a medical practitioner,
- (b) a registered pharmacist employed in dispensing medicines at any public hospital or other institution,
- (c) a person in charge of a laboratory for the purpose of research or instruction,
- (d) a registered dentist,
- (e) a registered veterinary surgeon,
- (f) an analyst appointed under the *Pure Food Act, 1908*,
- (g) a nurse employed in a public hospital or public institution (so far as the possession or use of such drug is required in connexion with its administration to a patient under the instructions of a medical practitioner), and
- (h) a nurse employed by the New South Wales Bush Nursing Association (so far as the possession or use of such drug is required in connexion with first-aid treatment or its administration to a patient under the instruction of a medical practitioner).

A person to whom a prescription for a drug has been given is authorized to procure and have possession of the drug to the extent specified in the prescription.

The authority to procure and be in possession of any drug does not entitle the holder to procure or have in his possession any drug in quantities greater than is permitted under the *Customs Act, 1901-1925*, of any proclamation, ordinance, regulation or other order made thereunder or under any amendment thereof.

#### Storage.

5. Every person authorized to procure and supply or be in possession of drugs shall keep the stock of drugs in his possession in a room, safe, cupboard or other receptacle, which must be kept securely locked when such stocks are not in immediate use.

**Prescriptions.**

6. No person other than a registered medical practitioner or a registered veterinary surgeon shall issue a prescription.

(a) The regulations require that the prescription shall be in writing, shall be dated, shall bear the name and address of the person for whom the prescription is given, shall be signed by the medical practitioner or veterinary surgeon by whom it is given, shall show the address of such medical practitioner or veterinary surgeon, and shall clearly indicate the maximum number of times such prescription shall be dispensed.

(b) A prescription shall be given by a medical practitioner only for the supply of the drug for use in the course of medical treatment and by a registered veterinary surgeon only for the supply of the drug for use in the course of treatment of animals, and every prescription issued by a veterinary surgeon shall be marked "For animal treatment only".

(c) Where a prescription contains an unusual dose or what may be regarded as a dangerous dose, the medical practitioner or veterinary surgeon by whom it is given shall indicate that such is intended and not inadvertent by underlining that part of the prescription and initialling the same in the margin.

(d) The prescription shall not bear the impression of a rubber stamp or other such contrivance in lieu of the written signature of the medical practitioner or veterinary surgeon by whom it has been issued.

(e) The prescription shall not be written in cipher.

(f) Where a medical practitioner or veterinary surgeon in a case of emergency orally or by telephone or telegram directs the dispensing of a drug, he shall forthwith write a prescription complying with the conditions prescribed in paragraph (a), mark such prescription so as to show clearly that it has been given as a confirmation of the directions given by him orally or by telephone or telegram, and dispatch such prescription without delay to the person by whom the drug was dispensed.

(N.B.) A medical practitioner or veterinary surgeon who gives, and a pharmacist who accepts and dispenses, a prescription not drawn up in every particular in accordance with the regulations commits an offence against the act.

It is desired to impress as strongly as possible on medical practitioners and veterinary surgeons the importance of their observing the above requirements strictly when giving a prescription. Any irregularity on the part of the medical practitioner or veterinary surgeon may lead to delay in the person to whom the prescription is directed obtaining the medicine prescribed; and it is extremely unfair to the pharmacist that he should be placed in the position of either delaying an important prescription and possibly offending the medical practitioner or veterinary surgeon, or committing a breach of the law. There is reason to believe that there are still numerous irregularities in giving prescriptions for the drugs, and representations have been made by pharmacists as to the difficult position in which they are placed.

**Records to be Kept.**

7. The holder of a licence under the regulations, the registered pharmacist who manufactures, retails, supplies, dispenses or compounds drugs in the ordinary course of retail business, the person in charge of a laboratory for the purpose of research or instruction, and any other person who may, in the ordinary course of his profession or employment supply, dispense, or compound, or use drugs, or have drugs in his possession, shall keep, or cause to be kept, a register in or to the effect of Schedule 5 to the regulations, and shall enter or cause to be entered in such register records of the drugs manufactured, procured, supplied or used by him or on his behalf.

The entries in such register shall be written in ink on the day of the transaction. Such register shall be kept on the premises on which the drugs are kept, manu-

factured, used or disposed of, and where the holder of a licence or other authorized person has drugs on other premises he shall keep or cause to be kept such a register on those premises also.

All such registers shall be at all times available for inspection by persons authorized by or under the act or the regulations to inspect such registers.

Alterations, obliterations, or cancellations must not be made in any register, but any mistake made in any entry may be corrected by a marginal or foot note initialled and dated.

Where the holder of a licence or a person authorized to have drugs in his possession is required by the *Customs Act*, 1901-1925, or any proclamation, ordinance, regulation or other order made thereunder, or under any amendment thereof, to keep records of stocks and sales of drugs, such records shall, unless otherwise ordered by the Minister, be accepted in lieu of the register prescribed by the regulations.

Where a person authorized to have drugs in his possession for the purposes of his profession or employment does not manufacture, retail, dispense, or compound drugs, or where such dispensing or compounding is done by a medical practitioner, registered dentist or registered veterinary surgeon, for the purpose of treatment under his instructions or his direct personal supervision, it shall be a sufficient compliance with the regulations if such person keeps a record of:

- (a) the drugs obtained by him and the quantities of each;
- (b) the person or firm from whom he obtained such drugs;
- (c) the drugs disposed of or used by him and the quantities of each;
- (d) the manner in which such drugs were disposed of or used; and
- (e) the drugs remaining in his possession and the quantities of each.

Such records shall be in a book, either written in ink or gummed or pasted on the pages when the invoices *et cetera* are used for the purpose, and shall, together with the drugs then in possession of the authorized person, be produced for inspection on demand by an officer authorized in that behalf either by general or special order of the Minister.

All records, prescriptions, invoices and other documents relating to drugs and transactions in regard thereto belonging to any person licensed or authorized under the regulations to manufacture, procure, or supply any drug shall be kept by that person for not less than two years from the latest date on which such records or prescriptions, invoices or documents were made or acted upon.

**Dispensing Drugs.**

8. A medical practitioner, veterinary surgeon or pharmacist, or an assistant under the direct supervision of a medical practitioner, veterinary surgeon or pharmacist, shall be the only persons who shall dispense a drug.

The following conditions shall be observed by persons dispensing any such prescription for or supplying a drug upon any such prescription:

- (a) The prescription shall not be dispensed more than the maximum number of times indicated thereon, and on each occasion upon which it is dispensed shall be stamped or marked in writing or otherwise to show clearly the date upon which it is dispensed and the name and address of the person by whom it is dispensed.
- (b) The person who dispenses a prescription which does not clearly indicate the maximum number of times such prescription is to be dispensed or which has reached the last occasion on which it can be legally dispensed according to the maximum indicated thereon shall write, stamp or mark in legible letters across such prescription the word "cancelled".



- (c) The person who dispenses a prescription shall enter, or cause to be entered, in the register of drugs a proper record of the transaction. Such record shall be made in such a way as to be easily understood.
- (d) Before the drug is handed to the purchaser, the prescription, whether given in writing or otherwise, shall be copied in full into a "prescription book". The entry shall bear an identifying letter or number and date upon which the drug is dispensed, the name of the person by whom the prescription was issued, and be signed or initialed by the person who actually dispensed the drug. For the purpose of this regulation any card system approved by the Minister shall be deemed to be a "prescription book".
- (e) In the case of a repeated prescription, an entry in the prescription book of the fact of the repeat, signed or initialed, and dated as prescribed, shall be a sufficient compliance with the regulations.
- (f) The label on the bottle or package containing the drug shall be marked with the identifying letter or number of the prescription as appearing in the prescription book.
- (g) No person shall dispense a prescription marked "cancelled" or supply a drug upon such a prescription.
- (h) No person shall dispense any prescription which is illegible or defaced or which appears to him to be for the purpose of enabling some unauthorized person to obtain a drug or which does not appear to be genuine, or supply a drug upon such a prescription.
- (i) No person shall deliver a drug to any person not licensed or otherwise authorized to be in possession of the drug who purports to be sent by or on behalf of a person so licensed or authorized unless such person produces an authority in writing signed by the person so licensed or authorized to receive the drug on his behalf, and unless the person supplying the drug is satisfied that the authority is genuine. This regulation shall not be deemed to apply to medicines dispensed in pursuance of the regulations.

#### Labelling.

9. No person shall supply any drug unless the package or bottle containing the drug is plainly labelled or marked to show the amount of such drug contained therein.

No person shall supply any preparation or admixture containing any drug unless the package or bottle containing such preparation or admixture is plainly labelled or marked to show the total amount of such preparation or admixture in the package or bottle and the percentage of the drug contained therein, or, in the case of tablets or other articles, the number of such tablets or articles in the package or bottle and the percentage of the drug contained in each tablet or article.

Provided that this regulation shall not apply to any drug, preparation or admixture dispensed in accordance with the regulations.

#### Private Hospitals.

10. Persons in charge of or employed in private hospitals or similar establishments, other than those specially licensed or authorized to procure and supply drugs, are not permitted to be in possession of a dangerous drug unless the drug has been supplied on a prescription of a medical practitioner, issued in the name of a particular patient at the time being under treatment at such hospital or similar establishment.

#### Penalties.

11. Every person guilty of an offence against the act shall in respect of each offence be liable on summary conviction to a fine not exceeding £400 or to imprisonment with or without hard labour for a term not exceeding two years, or to both such fine and imprisonment.

And shall in every case on conviction for the offence, forfeit to His Majesty all articles in respect of which the offence was committed.

No person shall, on conviction for any offence of contravening or failing to comply with the conditions of any licence granted under the regulations made in pursuance of this act to supply a drug to which the act applies or any regulation relating to the keeping of books or the issuing or dispensing of prescriptions containing a drug to which the act applies, be sentenced to imprisonment without the option of a fine or to pay a fine exceeding £10, if the court dealing with the case is satisfied that the offence was committed through inadvertence and was not preparatory to or committed in the course of or in connexion with the commission or intended commission of any other offence against the act.

If any person attempts to commit an offence against the act, or solicits or incites another person to commit such an offence, he shall, without prejudice to any other liability, be liable on summary conviction to the same punishment and forfeiture as if he had committed an offence against the act.

Where a company is convicted for an offence under this act, the chairman, and every director and every officer concerned in the management of the company shall be deemed guilty of the like offence, unless he proves that the act constituting the offence took place without his knowledge or consent.

In any proceedings against a person for an offence against the act it shall not be necessary to negative by evidence any licence, authority or other matter of exception or defence, and the burden of proving any such matter shall lie on the person seeking to avail himself thereof.

#### Precaution Necessary in the Use of Dangerous Drugs.

12. While the use of morphine, heroin and cocaine in medical practice is always a matter calling for watchfulness and caution on the part of the medical practitioner, his responsibility is specially great in the treatment of persons addicted to the use of the drugs or persons as to whose condition in this respect there is room for doubt. Cases are not infrequently reported in which persons have applied to some practitioner not acquainted with their previous history to be supplied with, say, morphine on the grounds that they are suffering from some acute pain, and the story has been accepted by the practitioner without any adequate examination of the applicant or inquiry.

It is desirable that doctors treating addicts should cooperate with the Drug Bureau, Criminal Investigation Branch, Sydney. Such cooperation is often fruitful in preventing addicts from obtaining dual or surreptitious supplies of drugs.

There have been a number of cases recently of thefts of dangerous drugs left by medical practitioners in their motor cars outside the houses of patients whom they are attending. Medical practitioners are asked to be careful not to give opportunities for such thefts. Theft or losses of dangerous drugs should be reported to the police at once.

### Correspondence.

#### TUBERCULOSIS FOLLOWING CIRCUMCISION.

SIR: In reference to a report in THE MEDICAL JOURNAL OF AUSTRALIA for May 27, by Dr. Reginald Webster, on tuberculosis following circumcision, my own experience of this very rare occurrence may be of interest.

Nearly twenty years ago, when in general practice, I circumcised, under ether, a male infant at about ten days after birth. The child was exceptionally healthy and vigorous, and the operation was done under the usual



aseptic precautions, the instruments being lifted from the sterilizer as required. Two or three small vessels were clamped and tied with very fine catgut. The catgut had been prepared by myself by the then popular method of defatting with ether and immersing in biniodide spirit for a month. The more efficacious iodine method had not then come into vogue. These details are mentioned because of the subsequent sequence of events. The wound healed perfectly and it was not until some six weeks afterwards that the child was brought to me with a small indurated ulcer of the penis and adenitis of the inguinal glands on both sides. The ulcer was just below the corona, was discharging a thin glairy fluid, and the glands in the groin felt hard. My feelings, that by some awful and unaccountable means the child had become inoculated with syphilis, can be imagined. The small ulcer was gently scraped and a film made and stained with carbol fuchsin. It showed unmistakable numbers of tubercle bacilli, which were again confirmed by a bacteriologist. The inguinal glands enlarged and eventually broke down and were curetted. Subsequently all the lesions healed completely after a few weeks. The health of the child was never in any way impaired, though the pus from the suppurating glands also contained tubercle bacilli in large numbers. Both parents were quite healthy, and the boy has had no further illness, except periostitis of the tibia about nine years ago, which was incised and drained. I have recently seen the boy, now nearly twenty years of age, and he is evidently in perfect health.

The interesting point in the case is the query, how did the child become infected? Presumably perfectly sterilized instruments were used. No one but myself touched the instruments or wound. The nurse was exceptionally well trained in aseptic methods, and was free from tuberculosis. She is now, and has been for years, the matron of a large institution.

It is admitted that no masks were worn, either by the nurse or myself, and also that no gloves were used. The usual surgical cleanliness was observed and the penis was disinfected after retracting the foreskin.

What, then, was responsible for the localized tubercular infection?

In my own mind I feel sure the catgut was the culprit. It has since that time been abundantly proved that the biniodide method of sterilizing catgut is most untrustworthy, and a resistant bacillus like the tubercle bacillus would most unlikely be destroyed by this method. Also the site of the ulcer on the penis corresponded to the tying of the dorsalis artery at the operation. The type of tubercular infection in this case rather points to one of bovine origin, in that there was no subsequent general infection and that the local lesions healed without any trouble. Also it is probably more likely that catgut would be infected by the bovine type of bacillus rather than the human. It is to be regretted that some attempt was not made at the time to have the bacillus typed; also that none of the original spool of catgut used at the operation was left for bacteriological examination.

Yours, etc.,

HERBERT THROSBY.

Sydney,  
June 2, 1939.

### Special Notice.

THE WILUNA HOSPITAL, WESTERN AUSTRALIA.

WILUNA is a gold-mining town in Western Australia, situated about 500 miles north-east of Perth. It has a population of approximately 8,000 people, employed mainly in the mines, with the usual shopkeepers and others in the town. Three medical men practise in the town. Miners and their dependants are attended under an agreement with the hospital fund, run by a committee of management

elected by the members. For their services the medical practitioners receive thirty-five shillings *per annum* per member, this amount, together with an additional sum for hospital management, being retained by the mining companies from the employees' fortnightly pay envelope. Medical services under the agreement are largely those of ordinary lodge practice, with exclusion of operations, midwifery *et cetera*. The *Workers' Compensation Act* operates in the district, and consequently a large portion of the medical practitioners' income is derived from attendance carried out under the provisions of this act; the main business concern is the State Insurance Department run by the Government. Townspeople and others not employed in the mines form a source of private practice for the medical practitioners.

For some considerable time the Western Australian Branch of the British Medical Association has had difficulty in persuading the fund committees to accept the "Mining Fund Agreement", which embodies four main principles: (a) a *per capita* payment, (b) exclusion of workers' compensation practice, (c) an income limit, (d) medical representation on the committee without power to vote.

The board at Wiluna has recently decided to terminate the existing agreement with the medical practitioners and to institute a salaried medical service, the avowed object being to utilize the difference between what they will pay the medical practitioners and the amount which they compute is at present being earned by the practitioners in the town to finance the hospital, which is sorely in need of funds. It is proposed to employ three medical practitioners at salaries of £1,500, £1,000 and £1,000 *per annum*, gross; all services will be included, together with work which at present comes under the *Workers' Compensation Act*. It is arguable whether this can be done without infringement of an Act of Parliament or coercion of the worker. Be that as it may, the Western Australian Branch of the British Medical Association is opposed to this attempt to enforce a salaried service on the profession, and it has rejected the tentative proposals put forward by the board. The principle involved is of the utmost importance to practitioners in Western Australia, and, for that matter, throughout the Commonwealth. Members of the British Medical Association would be well advised to communicate with the Secretary of the Western Australian Branch before they make application for any of these appointments.

### Medical Prizes.

THE ROYAL ZOOLOGICAL SOCIETY OF VICTORIA.

THE Royal Zoological Society of Victoria, in order to stimulate research on the fauna of Australia, has determined to offer a prize of £25 for an essay on any scientific aspect of Australian fauna. This prize will be open to all interested persons, and competitors should forward their essays to the Secretary of the Society, at 80, Swanston Street, Melbourne, on or before December 30, 1939.

### Obituary.

JAMES HUTCHESON PESTELL.

We regret to announce the death of Dr. James Hutcheson Pestell, which occurred on June 8, 1939, at Melbourne, Victoria.

## Nominations and Elections.

The undermentioned have been elected members of the New South Wales Branch of the British Medical Association:

Beatty, Joan Checkley, M.B., B.S., 1939 (Univ. Sydney), Royal Prince Alfred Hospital, Camperdown.  
 Millar, Roy Henry Blythe, M.B., B.S., 1939 (Univ. Sydney), 159, Victoria Street, Ashfield.  
 Williams, Fenwick D'Arcy Moore, M.B., B.S., 1939 (Univ. Sydney), Sydney Hospital, Sydney.  
 Windsor, Harry Matthew John, M.B., 1939 (Univ. Sydney), Saint Vincent's Hospital, Darlinghurst.

## Books Received.

**PROBLEMS OF AGEING: BIOLOGICAL AND MEDICAL ASPECTS**, edited by E. V. Cowdry; A publication of The Josiah Macy Junior Foundation; 1939. London: Baillière, Tindall and Cox. Medium 8vo, pp. 785, with illustrations. Price: 45s. net.

**FEEL LIKE THIRTY AT FIFTY: RENEWED VIGOR THROUGH GLAND HYGIENE**, by E. W. Hirsch, B.S., M.D.; 1939. Chicago: Research Publications. Foolscap 8vo, pp. 116.

**FIRST AID BANDAGING**, by W. E. Bradford; 1939. London: George Allen and Unwin Limited. Crown 8vo, pp. 63, with illustrations. Price: 1s. net.

## Diary for the Month.

JUNE 26.—Queensland Branch, B.M.A.: Council.  
 JUNE 27.—New South Wales Branch, B.M.A.: Medical Politics Committee.  
 JUNE 28.—South Australian Branch, B.M.A.: Annual meeting.  
 JULY 6.—South Australian Branch, B.M.A.: Council.  
 JULY 27.—South Australian Branch, B.M.A.: Branch.  
 JUNE 28.—Victorian Branch, B.M.A.: Council.  
 JUNE 29.—New South Wales Branch, B.M.A.: Branch.  
 JULY 4.—New South Wales Branch, B.M.A.: Council (quarterly).  
 JULY 5.—Victorian Branch, B.M.A.: Branch.  
 JULY 5.—Western Australian Branch, B.M.A.: Council.  
 JULY 6.—South Australian Branch, B.M.A.: Council.  
 JULY 7.—Queensland Branch, B.M.A.: Branch.  
 JULY 11.—New South Wales Branch, B.M.A.: Executive and Finance Committee.  
 JULY 14.—Queensland Branch, B.M.A.: Council.  
 JULY 18.—New South Wales Branch, B.M.A.: Ethics Committee.  
 JULY 19.—Western Australian Branch, B.M.A.: Branch.  
 JULY 20.—New South Wales Branch, B.M.A.: Clinical Meeting.

## Medical Appointments.

The following appointments have been made at the Royal Alexandra Hospital for Children, Sydney: Dr. R. A. R. Green, Honorary Physician; Dr. S. G. Bradfield, Honorary Assistant Physician; Dr. K. M. Winning, Honorary Relieving Assistant Physician.

## Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser", pages xviii to xxi.

DEPARTMENT OF PUBLIC HEALTH, PERTH, WESTERN AUSTRALIA: Resident Medical Officer.  
 MCKINLAY HOSPITALS BOARD, JULIA CREEK, QUEENSLAND: Medical Officer.

ROYAL ALEXANDRA HOSPITAL FOR CHILDREN CONVALESCENT HOME, COLLARNOY, NEW SOUTH WALES: Honorary Visiting Medical Officer.

TARA DISTRICT HOSPITAL, TARA, QUEENSLAND: Medical Officer.

TOOWOOMBA HOSPITALS BOARD, TOOWOOMBA, QUEENSLAND: Resident Medical Officer.

WESTERN SUBURBS HOSPITAL, CROYDON, NEW SOUTH WALES: Honorary Officers.

## Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

| BRANCHES.                                                                           | APPOINTMENTS.                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NEW SOUTH WALES: Honorary Secretary, 135, Macquarie Street, Sydney.                 | Australian Natives' Association, Ashfield and District United Friendly Societies' Dispensary, Balmain United Friendly Societies' Dispensary, Leichhardt and Petersham United Friendly Societies' Dispensary, Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney, North Sydney Friendly Societies' Dispensary Limited, People's Prudential Assurance Company Limited, Phoenix Mutual Provident Society. |
| VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.                | All Institutes or Medical Dispensaries, Australian Prudential Association, Proprietary, Limited, Mutual National Provident Club, National Provident Association, Hospital or other appointments outside Victoria.                                                                                                                                                                                                            |
| QUEENSLAND: Honorary Secretary, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17. | Brisbane Associate Friendly Societies' Medical Institute, Proserpine District Hospital, Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.                                                                                                                       |
| SOUTH AUSTRALIAN: Secretary, 178, North Terrace, Adelaide.                          | All Lodge appointments in South Australia, All Contract Practice Appointments in South Australia.                                                                                                                                                                                                                                                                                                                            |
| WESTERN AUSTRALIAN: Honorary Secretary, 305, Saint George's Terrace, Perth.         | Wiluna Hospital, All Contract Practice Appointments in Western Australia.                                                                                                                                                                                                                                                                                                                                                    |

## Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to the Editor, THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-3.)

Members and subscribers are requested to notify the Manager, THE MEDICAL JOURNAL OF AUSTRALIA, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this journal. The management cannot accept any responsibility or recognise any claim arising out of non-receipt of journals unless such a notification is received within one month.

SUBSCRIPTION RATES.—Medical students and others not receiving THE MEDICAL JOURNAL OF AUSTRALIA in virtue of membership of the Branches of the British Medical Association in the Commonwealth can become subscribers to the journal by applying to the Manager or through the usual agents and booksellers. Subscriptions can commence at the beginning of any quarter and are renewable on December 31. The rates are £2 for Australia and £2 5s. abroad per annum payable in advance.



AUG 2 1939

Medical Library

THE

MEDICAL



JOURNAL

OF AUSTRALIA

VOL. I.—26TH YEAR.

SYDNEY, SATURDAY, JUNE 24, 1939.

No. 25.

**‘IODOLYSIN’**  
*Trade Mark*

IN RHEUMATISM  
& RHEUMATOID ARTHRITIS

“Iodolysin” is a soluble compound of Thiosinamin (43%) and Iodine (47%), used as a fibrolytic agent for the removal of pathological fibrous tissue.

It has given strikingly successful results in the treatment of many cases of rheumatism, rheumatoid arthritis and arthritis deformans. Good results have also been reported from the use of “Iodolysin” in the treatment of strictures, pyloric stenosis and arteriosclerosis. Physicians are invited to write for leaflet giving full particulars and details of treatment.

PREPARATIONS.

“AZOULE” “IODOLYSIN”, for Hypodermic Injection, min. 15 and min. 30: in boxes of 12.

“KAPSOL” “IODOLYSIN” Gelatine capsules for oral administration: each contains 2 grs. “Iodolysin”: boxes of 40.

“IODOLYSIN” SOLUTION for oral administration: 1 oz. and 2 oz. bottles.

“IODOLYSIN” OINTMENT for local application: 1 oz. tubes.

“IODOLYSIN” PIGMENT for local application: 1 oz. bottles.

**ALLEN & HANBURY'S (AUSTRALASIA) LTD.**

41, HUNTER STREET, SYDNEY



## Jenyns Surgical Corsetry

for effective control and support



Correct for post-operative wear and in all cases of visceroptosis or general weakness.

We specialise in making and fitting surgical Belts, Corsets, Girdles, Corselettes, Brassieres, Spinal Supports, Trusses and all kinds of Elastic Supports.

● Prices for special garments and further information will readily be supplied upon request.



**THE JENYNS PATENT CORSET PTY.**

309-315 George Street, Brisbane

MADE IN AUSTRALIA

1939

## LIST OF MEMBERS

of the branches of

THE BRITISH MEDICAL ASSOCIATION  
IN AUSTRALIA

**NOW AVAILABLE**

OBTAINABLE FROM

**AUSTRALASIAN MEDICAL PUBLISHING COMPANY, LIMITED**

THE PRINTING HOUSE . . . . . SEAMER STREET, GLEBE







# The Mistol Treatment

Quickly Relieves Nasal Congestion



During the winter months, when common colds are rife, you are frequently called upon to prescribe or recommend a harmless and effective local treatment for the nose and upper respiratory tract.

Because it avoids internal medication, which should be the sole province of the physician, the Mistol treatment is safe in the hands of the patient. Mistol Drops consists of camphor, menthol, eucalyptol and chlorbutanol in a light petrolatum liquidum possessing the maximum properties of spread and tenacity, so as to cling as a thin, protective film to the mucous membranes to which it is applied.

It represents the pharmaceutical perfection of a prescription which has been widely used by leading nose and throat specialists for common cold, rhinitis and catarrhal conditions. When you recommend Mistol Drops or Mistol Drops with Ephedrine, you save your patient from the danger of taking an uncertain, secret, and perhaps harmful "remedy" for colds.

Either may be instilled into the nose by means of the special Mistol dropper, and allowed to trickle back into the nasopharynx and pharynx; used as a gargle in full strength; or sprayed into the bronchial tubes as a fine vapour, by means of a nebulizer.

Samples for clinical use will be sent upon request by writing Potter & Birks Pty. Ltd., Grosvenor Street, Sydney, N.S.W.

**Mistol Drops**  
and  
**Mistol Drops**  
WITH EPHEDRINE

## Surgical Corsetry Fitter

secures overseas diploma

Our certified Sister, back from abroad after a course in the S.H. Camp Company "School for Surgical Fitters," enables us to offer the Medical Profession and patients the highest efficiency in fittings for surgical corsets. Sister Gibbs is available for your patients in our department, any hospital or in your rooms.

She specialises in fittings for . . .

Pre-natal Care      Post-natal Care      Hernia  
Post-operative Conditions      Breast Supports

**DAVID JONES'**

101 years of service

## Kosciusko in Spring

LONGER, WARMER DAYS  
IDEAL SNOW CONDITIONS

TEN-DAY TOURS LEAVE SYDNEY

September 1, 8 . . . . . £11 15 0

September 15, 22, 29 and October 6,  
13, 20 and 27 . . . . . £9 5 0

INCLUSIVE COST  
COVERS EVERY EXPENSE

Ask for folder

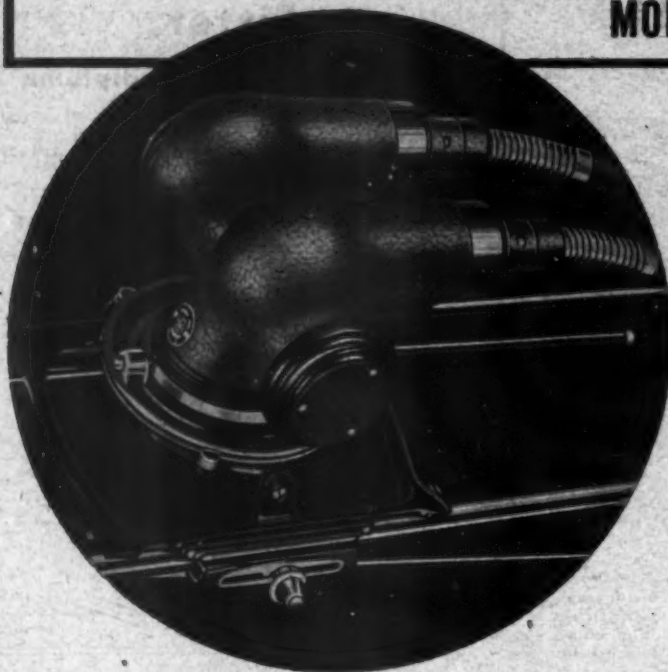
**N.S.W. GOVERNMENT TOURIST  
BUREAU, Challis House, SYDNEY**

Tel. BW 4471.

BRANCH BUREAU AT WYNARD STATION

## The Tube You've Been Waiting For

### MODEL DX COOLIDGE



A new oil-immersed, shockproof, double-focus diagnostic tube unit—much smaller and lighter; more flexible; efficient and durable; and universally adaptable.

**W**HEN the first oil-immersed, shockproof diagnostic tube unit (Model SP Coolidge) was introduced five years ago, roentgenologists predicted its rapid adoption as a highly practical and economical means of making existing equipment shockproof.

Now you may enjoy the benefits of this epochal development in a new Coolidge tube unit—Model DX—which despite its remarkably small size and light weight offers the same practical range of diagnostic service. Moreover, it is immediately adaptable to practically any type of tube stand in present use, to effect 100% electrically safe operation.

You'll also appreciate the other improvements and refinements which assure you the most satisfactory tube service you have ever experienced. The new cathode construction, for example—oil-cooled, to eliminate cathode-

gas problems once and for all, thus insuring a better and more economical tube performance; the plug-in type of cable connections, which simplify tube service and minimize interruption to working schedules; the small, light-weight cables which increase flexibility of use; and the two most practical double-focus combinations for modern diagnostic requirements.

In planning toward modernization of your present equipment, be sure to investigate all the possibilities with the Model DX Shockproof Coolidge tube unit.

**WATSON VICTOR**  
LIMITED

(Incorporated in N.S.W.)

Bligh St., Sydney

117 Collins St., Melbourne

Brisbane, Adelaide, Perth, Newcastle, Launceston and N.Z.







**MICROSCOPES**

Research, Students' and other models, by W. & H. Seibert (Germany), Leitz (Germany), Rosenbaum (Germany), C. Baker (London), New and S.H. from £11/10/- Other models, 5/6 to £100.

Also Diagnostic Sets, Ophthalmoscopes, Stethoscopes, Microscope Accessories, Stains, Reagents, Mounted Slides, Telescopes, Binoculars, Natural History Books, new and second hand. OIL IMMERSIONS by leading makers from £3/10/-.

Catalogues free.

**N. H. SEWARD PTY. LTD.**

"Optical House," 457 Bourke St., Melbourne, C.I.

**SOUTH AUSTRALIAN PRACTICES.**

Country, exceptional opportunity, owner after 13 years engaging to practise entirely different part of State. Very solid old-established general practice, unopposed, nearest opposition 22 miles. Cash income last year £1,579, average last four years over £1,500. Easily one of the best country hospitals in the State, Govt. subsidised, equipped good X-ray; mids. average 56 p.a. National insurance cannot prejudicially affect. House comf. eight rooms, water, electric current, every amenity. Chemist in town. Price, practice £1,350, house £1,500. Deposit £750 and annual payments £250. If desired, will lease house, £84 10s. p.a.

Seaside, within reasonable distance of Adelaide. Two Practices, cash income £2,300 and £1,500; and others. Particulars in confidence.

**W. S. HANSON,**

197, North Terrace, Adelaide.

**W. RAMSAY (Surgical) Pty. Ltd.**

**Surgical Instruments and Hospital Appliances**

**LATEST MEDICAL AND SURGICAL BOOKS AVAILABLE.**

**SOLE AUSTRALASIAN AGENTS LEITZ MICROSCOPES**

**W. RAMSAY (SURGICAL) PTY. LTD.**

340 Swanston Street, Melbourne.  
18 Howard Street, Perth.

**CHIROPODY**

**T. R. CHRISTIE**

Diploma Scientific Chiropody.  
**MASTER CHIROPODIST.**

Room 19, Fourth Floor,  
Challis House,  
10 Martin Place, Sydney.

**PROFESSIONAL STATIONERY**

and all classes of printed matter on shortest notice.

**THE PRINTING HOUSE,**  
Seamer Street, Glebe, Sydney.  
Telephone: MW 2651-2.

Suburban Practitioners  
will find our Services  
surprisingly effective  
... and the fees are  
reasonable too!

*Whelan Carricks & Co.*

**MEDICAL ACCOUNTANTS**

14 SPRING ST SYDNEY

PHONE 33941

**PERCIVAL D. OLLÉ**  
M.S.R., H.P.A., N.R. (Eng.).

**MASSEUR,  
PHYSIO-THERAPEUTIST.**

Ultra Short and Short Wave  
Diathermy. Ultra Violet  
(Mercury Vapour). Infra-  
Red. Electrical Iontophoresis.  
And all modern treatments  
used in Physical Medicine.

"Wembury",

43 ELIZABETH ST., ASHFIELD.  
Telephone UA 1097.

**OUR BABIES**

By GERTRUDE C. BUZZARD DUNLOP, M.B., Ch.B.

**A PRACTICAL GUIDE FOR MOTHERS IN THE CARE OF INFANTS AND YOUNG CHILDREN**

"So excellent and so readable is her treatment of these very wide and important subjects, condensed of necessity into a comparatively small space, that it would be difficult to find any serious fault in the book."—*The Medical Journal of Australia*, September 21, 1929, page 405.

"Her sound common sense and sane advice on the management of the family must be of the greatest value to all."—*The Maitland Daily Mercury*, January 30, 1929.

Demy 8vo, illustrated, pp. 102. Price: 1s. 6d.

**Australasian Medical Publishing Company, Limited**

The Printing House

SEAMER STREET, GLEBE, NEW SOUTH WALES

Commonwealth of Australia—Department of Health

# USE CORYZA AND INFLUENZA VACCINES

*as prophylactics for persons subject to*

## COUGHS, COLDS BRONCHITIS, CORYZA

These vaccines have been found very useful in preventing the frequent recurrences of feverish colds, and in aborting acute rhinitis.

They are recommended as prophylactics for persons who are attacked by winter cough or bronchitis and for the prevention of coryza epidemics.

### CORYZA VACCINE (MIXED)—

|                         |             |                |       |                         |             |                |         |
|-------------------------|-------------|----------------|-------|-------------------------|-------------|----------------|---------|
| (a) 1 cc.<br>containing | 100 million | M. catarrhalis | } 2/- | (b) 1 cc.<br>containing | 500 million | M. catarrhalis | } 2/6d. |
|                         | 100 "       | B. Hoffmann    |       |                         | 500 "       | B. Hoffmann    |         |
|                         | 100 "       | B. Friedländer |       |                         | 500 "       | B. Friedländer |         |
|                         | 100 "       | Staphylococci  |       |                         | 500 "       | Staphylococci  |         |
|                         | 10 "        | Pneumococci    |       |                         | 50 "        | Pneumococci    |         |
|                         | 10 "        | Streptococci   |       |                         | 50 "        | Streptococci   |         |

### CORYZA VACCINE (POLYVALENT)—

|                         |            |                                               |         |                         |             |                                               |         |
|-------------------------|------------|-----------------------------------------------|---------|-------------------------|-------------|-----------------------------------------------|---------|
| (a) 1 cc.<br>containing | 25 million | M. catarrhalis                                | } 2/6d. | (b) 1 cc.<br>containing | 125 million | M. catarrhalis                                | } 2/6d. |
|                         | 10 "       | Pneumococci                                   |         |                         | 50 "        | Pneumococci                                   |         |
|                         | 10 "       | Streptococci                                  |         |                         | 50 "        | Streptococci                                  |         |
|                         | 10 "       | Gram-positive diplococci<br>(not Pneumococci) |         |                         | 50 "        | Gram-positive diplococci<br>(not Pneumococci) |         |

### INFLUENZA BACILLUS VACCINE—

1 cc. containing 500 million organisms - - - - - 1/6d.

### INFLUENZA VACCINE (MIXED)—

|                         |            |                                               |         |                         |             |                                               |         |
|-------------------------|------------|-----------------------------------------------|---------|-------------------------|-------------|-----------------------------------------------|---------|
| (a) 1 cc.<br>containing | 25 million | B. influenzae                                 | } 2/6d. | (b) 1 cc.<br>containing | 125 million | B. influenzae                                 | } 2/6d. |
|                         | 25 "       | M. catarrhalis                                |         |                         | 125 "       | M. catarrhalis                                |         |
|                         | 10 "       | Pneumococci                                   |         |                         | 50 "        | Pneumococci                                   |         |
|                         | 10 "       | Streptococci                                  |         |                         | 50 "        | Streptococci                                  |         |
|                         | 10 "       | Gram-positive diplococci<br>(not Pneumococci) |         |                         | 50 "        | Gram-positive diplococci<br>(not Pneumococci) |         |

Supplies may be obtained from the Commonwealth Serum Laboratories, Parkville, N.2, Victoria, and also from the following: Director-General of Health, Canberra; Chief Quarantine Officers (General), Customs House, Circular Quay, Sydney; Anzac Square, Adelaide Street, Brisbane; C.M.L. Building, 41-47 King William Street, Adelaide; G.P.O., Perth; Commonwealth Health Laboratory, Launceston.

**COMMONWEALTH SERUM LABORATORIES**  
PARKVILLE, N.2 — VICTORIA — AUSTRALIA



